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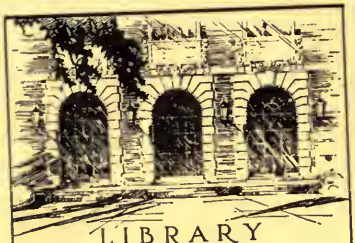

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the Rubiaceae it is clear that the plants, in spite of the unusual size of their leaves and flowers, bear much resemblance to the genus *Sipanea*, to which structural details indicate their close relationship. The genus *Sipanea*, of the tribe Rondeletieae, has a number of species in tropical South America, and one ranges northward to the westernmost Antilles, but no species have been recorded for continental North America. In *Sipanea* the plants are low herbs with elongate, leafy stems, along which are scattered the small leaves. The flowers are 5-parted, the corolla usually yellow-barbate in the throat, and the seeds angulate and conspicuously reticulate. The habit of the Guatemalan plant, combined with 4-parted flowers, naked corolla throat, and globose, not angulate seeds, are sufficient characters for its recognition as a distinct genus.

The corolla limb in *Steyermarkia* is rather shallowly lobed, that is, not nearly to its base. The pubescence of the young hypanthium and probably also of other parts consists of very long and slender hairs that at first are gland-tipped. The glands disappear at an early stage, perhaps breaking from the hair tips or possibly being absorbed in some manner.

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STUDIES OF CENTRAL AMERICAN PLANTS—I

BY

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STUDIES OF CENTRAL AMERICAN PLANTS—I

PAUL C. STANDLEY AND JULIAN A. STEYERMARK

During 1938–40 Field Museum sent to Guatemala two expeditions under leadership of the writers. The first, from November, 1938, to May, 1939, was the Sewell L. Avery Botanical Expedition to Guatemala, undertaken by the senior author; the second, from September, 1939, to May, 1940, the Field Museum Expedition to Guatemala, was directed by the junior author.

The immediate purpose of these expeditions was the assembling of herbarium collections to serve as the basis of a *Flora of Guatemala* now in preparation. They resulted in the collection of more than 27,000 numbers, with many duplicates, of phanerogamic and cryptogamic plants. Both expeditions were highly successful in fulfilling the purposes for which they were planned. Material was obtained of several thousand species of plants, some common and already known from Guatemala, others representing species described from Guatemala but known previously only from the type material, and also many Central American and Mexican species unknown previously from Guatemala. In addition there was obtained a satisfactory and even surprising number of apparently new species.

The following pages are devoted principally to descriptions of new species of Guatemalan plants, or to notes regarding species new to the country, or of rare occurrence inside Guatemala or in other parts of their range. The data here presented represent only a small part of those worthy of report, and additional matter will be published later. Of the collection made by the expedition of 1939–40 only a minor portion has been studied. While most of that obtained in 1938–39 has been determined, there are mentioned here only a few of the more interesting species, many others of equal interest remaining for further attention and report.

The writers made extensive or limited collections in all the 22 departments of Guatemala except Petén, that being the only one—and a very large portion of the country, it must be admitted—not easily reached by convenient means of transportation. Guatemala is almost unique among Latin American countries in its very elaborate—considering its size—road system, enabling one to reach almost all inhabited regions by automobile. This naturally facilitates greatly botanical collecting, for with one's collecting outfit in

a passenger car or truck, it is possible to arrive at a great number of central points from which there can be made short excursions covering almost the whole of Guatemala except Petén.

The senior author during 1938–39 collected in all the 22 departments except two, Jalapa and Petén. More time was spent with headquarters at Antigua than elsewhere. That happens to be a center from which radiate numerous roads, leading in all directions. Extensive collections were made in the highlands and numerous excursions to the Pacific lowlands, the slopes of the volcanoes of Agua and Acatenango, a visit of two days to the Oriente, a long tour through the departments of Sololá and Quiché, to Huehuetenango, returning by way of Quezaltenango, Totonicapán, and the Lake of Atitlán.

Later, with headquarters at Quezaltenango, several weeks were devoted to exploration of the exceedingly rich Occidente, with long trips to Huehuetenango, the Sierra de los Cuchumatanes, various localities in the white-sand region of San Marcos, to Malacatán and Ayutla, and along the vast barranco of the Río Samalá to Mazatenango, Retalhuleu, and Champerico. One trip was made by way of Palojunoj to the summit of the Volcano of Santa María.

Almost a month, but only a very brief space of time considering the size and richness of the area involved, was spent at Cobán in Alta Verapaz, long celebrated for its orchids and its great variety of vegetation typical of upland and lowland rain forest. It is said of Cobán that rain falls there 13 months of the year, and such humidity results in a vivid greenness that is most welcome to the eye after the somewhat barren conditions prevailing in many other portions of Guatemala during the so-called dry season, the winter months of the North.

Before leaving the country, Mr. Standley spent a few days in the departments of Zacapa and Chiquimula, and three weeks in the banana country of the north coast, with headquarters at Puerto Barrios. He had collected here 17 years previously, but at this time found many plants not observed upon the earlier visit.

The junior author during the corresponding months of 1939–40 explored rather intensively several large areas not visited at all, or investigated only casually by Mr. Standley. Arriving in Guatemala before the end of the rainy season, he worked first in the Oriente, the eastern portion of the country near the borders of Honduras and Salvador. Here much of the vegetation dries quickly after the end of the rains, hence it is only while there still is moisture that it

can be collected to advantage. From Zacapa trips were made to the Sierra de las Minas, whose flora is related with that of Alta Verapaz, and to other local areas of botanical promise. Later, from headquarters at Chiquimula, Camotán, and Quezaltepeque, visits were made to several of the isolated volcanoes and peaks, such as Volcán de Quezaltepeque, Volcán de Ipala, Cerro Tixixí, Cerro Nonojá, Montaña El Barriol, Montaña Castilla, Cerro Brujo, Socorro Mountain, and many others that rise above the eastern plains. Then from Asunción Mita in the Department of Jutiapa trips were made to Volcán de Suchitán, which is isolated for miles from any other peak, saline flats and marshes around Trapiche Vargas, and the lakes Güija and Atescatempa, which were remarkable for their aquatic species. The last part of the Oriente to be visited was the Department of Jalapa, poorly represented previously in botanical collections. Here, with headquarters at Jalapa, Miramundo, and Minas de Croma, trips were made to Volcán de Jumay, Montaña Miramundo, Potrero Carrillo, Montaña Durazno, and Lago Retana.

More than a month was passed with headquarters at Finca Pireneos, in the valley of the Río Samalá, Department of Quezaltenango, where facilities for collecting were very courteously provided by Professor Ulises Rojas, Director of the Botanical Garden of Guatemala. From this locality there were explored the little known volcanoes of Santa María and Zunil, the summits of both being reached, and the somewhat meager alpine flora of the former collected.

A rather thorough exploration was made of certain areas of the Department of San Marcos, which lies along the Mexican border. Most attention was given to the volcanoes of Tajumulco and Tacaná, the former the highest peak of Central America. Collections made on these two mountains prove to be probably the richest in new and rare species of all those made during present Guatemalan explorations.

So vast is the area of Volcán Tajumulco that it was worked from various altitudes and localities, on the rear plateau side from San Sebastián, on its northwestern slopes from the village of Tajumulco, and on its Pacific slopes from Finca El Porvenir. A good cross-section of this mighty volcano was thereby studied. The tree ferns, of which large and extensive collections were made, are more abundant and conspicuous here and on the volcanoes of Santa María and Zunil than anywhere else in Central America. In order to work the Guatemalan portion of Volcán de Tacaná, a long mule trip was made from San Sebastián to Sibinal, where headquarters were established for five days' collecting.

From the Occidente work was transferred to an altogether unlike region, the lowlands of the north coast. With headquarters first at Bananera and later at Puerto Barrios, in both cases furnished through the courtesy of the United Fruit Company, a large and rich collection was made, especially in the Sierra del Mico and along the Río Dulce and Lake Izabal. These collections also have proved to be surprisingly rich in new species and in species new for Guatemala.

On the following pages there are described no less than four new genera, two based upon species already described under other generic names, and two that are new as to both genus and species. Special attention is drawn to the plant of the Compositae here named *Rojasianthe superba*. It is one of the most elegant and exquisitely beautiful plants that we have ever seen in Central America, or elsewhere. Suggesting in appearance a tree *Dahlia*, with a multitude of large heads, having long, paper-white rays and black centers, and visible at a great distance wherever it grows, it is hard to understand how it has escaped the several botanical collectors, dating back to the time of Hartweg, who have visited the Occidente. Its range, so far as now known, is rather limited, and probably it has merely happened that none of those earlier visitors reached the secluded ravines where the plant grows. It is to be hoped that it may be introduced into cultivation, but probably it is rather particular as to environment. It is believed that it might flourish about San Francisco, California, or perhaps in southern England. A large plant would well justify, when in flower, the space it would occupy in a sufficiently spacious greenhouse.

GRAMINEAE

Luziola Spruceana Benth. ex Doell. in Mart. Fl. Bras. 2, pt. 2: 18. 1871.—In continental North America this strange grass has been found heretofore, so far as we know, only in Lake Yojoa, Honduras (see Standley, Field Mus. Bot. 11: 146. 1936). Recently it has been collected in Guatemala: Dept. Jutiapa, Lago de Atescatempa, south of Asunción Mita, alt. 500–800 meters, November, 1939, *Steyermark* 31879. Plants monoecious, growing in water, the staminate inflorescence yellow, the pistillate white.

Zeugites latifolia (Fourn.) Hemsl. Biol. Centr. Amer. Bot. 3: 577. 1885. *Krombholzia latifolia* Fourn. Bull. Soc. Bot. Belg. 15: 463. 1876.—This handsome grass was described from Mexico, and until recently was supposed to be confined to that country. How-

ever, two recent Central American collections of it are at hand: Guatemala: Dept. Suchitepéquez, Finca Moca, alt. 930 meters, *Skutch* 2059; growing in clumps, to 3 meters in height. Dept. Quezaltenango, Finca Pireneos, lower slopes of Volcán de Santa María, alt. 1,300–1,500 meters, *Steyermark* 33266; plants 3 meters tall, on open slopes in thickets.

JUNCACEAE

Luzula racemosa Desv. Journ. de Bot. 1: 162. *pl 6, f. 3.* 1808. —The genus *Luzula* is poorly represented in Central America, where it is confined to the higher mountains. *Luzula gigantea* Desv. is the only common and widely dispersed species, and the only one known previously from the region, so far as available records indicate. The collections cited below are referable to *L. racemosa* as that species is treated in the notoriously unsatisfactory treatment of the family by Buchenau in the *Pflanzenreich.* Guatemala: Dept. San Marcos, Volcán de Tajumulco, common on rocky summit from the base of the dome to its top, alt. 4,400–4,600 meters, *Steyermark* 35536. Dept. Quezaltenango, exposed summit of Volcán de Santa María, alt. 4,200 meters, *Steyermark* 34200.

JUGLANDACEAE

Engelhardtia guatemalensis Standl. Bot. Ser. Field Mus. 22: 12. 1940.—When this species was published, there was overlooked one collection that indicates a rather wide range for the species: Guatemala: Dept. Quezaltenango, Finca Pireneos, below Santa María de Jesús, alt. 1,350–1,380 meters, damp, dense forest, a large tree, *Standley* 68332. The specimen is sterile, but the foliage agrees with that of the material from the distant department of Alta Verapaz. The local name was given at Finca Pireneos as Palo colorado. There may be reported also another Guatemalan collection: Dept. San Marcos, above Finca El Porvenir, up Loma Bandera Shac, lower south-facing slopes of Volcán de Tajumulco, alt. 1,300–1,500 meters, *Steyermark* 37347; a tree of 9 meters, on middle and upper slopes; leaves chartaceous, dark green above, paler, dull green beneath.

MORACEAE

Coussapoa Purpusii Standl. Field Mus. Bot. 8: 6. 1930.—The species was based on material collected in Veracruz, Mexico. Additional collections show that its range extends far beyond that state: Mexico: Zacuapam, Veracruz, on rocks in barrancas, half epiphytic,

May, 1933, *Purpus* 11162. Jalisco, Las Mesitas, northwest of San Sebastián, Sierra Madre, alt. 1,700 meters, stream side, *Mexia* 1872 (distributed as *Oreopanax capitatum*); trunk embraced by a wild fig, but sending out branches 6–8 meters long; staminate inflorescence red. Santa Rita, Mapastepec, Chiapas, *Matuda* 2020.—Guatemala: Dept. San Marcos, Finca El Porvenir, on Potrero Matasán along Río Cabús, Volcán de Tajumulco, alt. 1,000–1,300 meters, *Steyermark* 37602; local name Matapalo; epiphytic shrub, the leaves coriaceous, rich, dark green above with greenish white nerves, silvery beneath; fruit dull orange spotted with deeper orange, globose. Dept. Quezaltenango, Colomba, in coffee plantation, alt. 900 meters, *Skutch* 2023; a tree of 18 meters, epiphytic on an *Inga* tree, to whose trunk it is attached by clasping roots; flowers dull red. The plant of Chiapas and Guatemala has somewhat wider leaves and may prove, when more ample material is available, to represent a distinct species.

Ficus cabusana Standl. & Steyerm., sp. nov.—Arbor 30-metralis fere glabra, ramulis crassis glabris lucidis ferrugineis vel ochraceis, internodiis superioribus brevissimis; stipulae caducae ca. 2 cm. longae oblongo-lanceolatae longiacuminatae; folia magna longipetiolata subcoriacea, petiolo gracili 2.5–6.5 cm. longo glabro; lamina ovalis vel late ovali-ovata 12–21 cm. longa 7.5–14 cm. lata, apice obtusissima vel rotundata, haud apiculata, basi lata et rotundata breviter angusteque cordata, sinu aperto usque 1.5 cm. alto, glabra, supra in sicco sublucida fusco-brunnescens, costa vix elevata, venis pallidis prominulis, subtus paullo pallidior brunnescens, costa crassa elevata, nervis lateralibus utroque latere ca. 10 teneris prominentibus fere rectis sed marginem versus sursum curvatis angulo lato divergentibus prope marginem bifidis et juxta marginem irregulare arcuato-junctis, venulis vix prominulis laxe reticulatis, e basi 7-nervia; receptacula sessilia geminata ca. 12 mm. longa saepe ob pressum mutuum obtuse angulata in involucro omnino inclusa glabra, apice rotundata, ostiolo parvo prominente; involucrum bilobum coriaceum receptaculum arcte involvens lucidum brunneum glabrum vel sparse minute puberulum.—Guatemala: Dept. San Marcos, Finca El Porvenir, on Potrero Matasán, along Río Cabús, Volcán de Tajumulco, alt. 1,000–1,300 meters, March 12, 1940, *Julian A. Steyermark* 37583 (type in Herb. Field Mus.).

Local name Matapalo. Leaves subcoriaceous, rich, bright green above, pale green beneath. The relationship is with *Ficus Tuerckheimii* Standl., also Guatemalan. *F. cabusana* may be only an

extreme form of that species, and perhaps later will have to be united with it. It seems distinct in its much larger leaves, which are conspicuously and sometimes deeply cordate at the base.

POLYGONACEAE

Coccoloba belizensis Standl. Trop. Woods 16: 38. 1928.—One sterile collection of the species has been made in Guatemala: Dept. Izabal, between Bananera and La Presa, in Montaña del Mico, alt. 40–300 meters, *Steyermark* 38186; a tree; leaves coriaceous, stiff and brittle, rich green above, dull grass-green beneath. Previously the tree has been known only from British Honduras.

Coccoloba escuintlensis Lundell, Phytologia 1: 213. 1937.—Based upon a collection made at Escuintla, Chiapas, Mexico, this tree is now found to range rather widely in Guatemala. Most of the following collections have been determined by Dr. Lundell: Dept. San Marcos: Finca Vergel, near Rodeo, alt. 900 meters, wet forest, *Standley* 68952, 68949; a large shrub or small tree. Río Mopá, below Rodeo, alt. 600 meters, wet forest, *Standley* 68770; a large shrub.—Dept. Suchitepéquez: Near Pueblo Nuevo, alt. 750 meters, wet thicket, *Standley* 66936; a shrub.—Dept. Escuintla: Río Guacalate, alt. 600 meters, *Standley* 60190; a shrub in wet forest. Between Río Jute and Rio Pantaleón, alt. 540–720 meters, in forest or pastures, *Standley* 63488, 63464; a tree of 9–15 meters with short trunk and broad crown, common; flowers pale green. Below Las Lajas, alt. 900–1,200 meters, damp forest, *Standley* 64787; a shrub of 3 meters.

Coccoloba hirsuta Standl. Field Mus. Bot. 4: 303. 1929.—The original material was collected near Tela on the Atlantic coast of Honduras, and the tree was to be expected on the north coast of Guatemala, where two recent collections of it have been made: Dept. Izabal: Between Bananera and La Presa, in Montaña del Mico, alt. 40–300 meters, *Steyermark* 38185; a tree; leaves membranaceous, olive-green above, bronze-green beneath. Escoba, across the bay from Puerto Barrios, near sea level, wet forest, *Standley* 72945; a shrub. This species still is known only from sterile specimens, but the foliage and pubescence are quite distinctive. This and *C. belizensis* were growing together near Bananera, and there is a possibility that *C. hirsuta* may be only a juvenile state of that species, although the pubescence is so different in the two forms that this seems scarcely possible.

Rumex mexicanus Meisn. in DC. Prodr. 14: 45. 1856.—No native species of *Rumex* has been reported from Central America, and perhaps there is none, but *R. crispus* L., *R. obtusifolius* L., and *R. Acetosella* L. are all too abundantly naturalized in many regions, especially Costa Rica and Guatemala. *R. mexicanus*, although widely distributed, has not been recorded previously from Central America, but the following collections are at hand from Guatemala: Olintepeque, Dept. Quezaltenango, alt. 2,415 meters, common in old garden, *Standley* 65996. Quezaltenango, alt. 2,280 meters, common in moist field, *Standley* 66435. Dept. San Marcos, town of Tajumulco, alt. 2,300 meters, *Steyermark* 36516. It is impossible to decide whether the plants are native here or introduced, like other weedy species with which they are associated.

AMARANTHACEAE

Froelichia interrupta (L.) Moq. in DC. Prodr. 13, pt. 2: 421. 1849. *Gomphrena interrupta* L. Sp. Pl. 224. 1753.—Although apparently not especially common anywhere, the species has a wide range, from western Texas through various parts of Mexico, in the Greater Antilles, and in isolated parts of South America from Colombia to Paraguay and Chile. It has not been recorded from Central America, but two collections of it may now be placed on record: Guatemala: Dept. Zacapa, upper slopes, rocky hills in vicinity of Santa Rosalía, 2 miles south of Zacapa, alt. 200 meters, October, 1939, *Steyermark* 29307, 29026.

NYCTAGINACEAE

Allionia incarnata L. Syst. ed. 10. 890. 1759.—About 20 years ago the senior author, while riding by train through the Motagua Valley of Guatemala, observed this plant growing at one place on the railway embankment, where it was impossible to collect it. Although it has a very extensive range in the western hemisphere, from southwestern United States to Argentina, through most of Mexico, it has not been recorded from Central America until now. Guatemala: Dept. Zacapa, along railroad between La Fragua and Estanzuela, alt. 200 meters, October, 1939, *Steyermark* 29133.

PHYTOLACCACEAE

Ledenbergia macrantha Standl. Journ. Wash. Acad. Sci. 13: 350. 1923.—This tree seems to be a rare one, for it has been collected very few times, and only in Salvador. Recently it has been found in Guatemala: Dept. Guatemala, in 1940, *Ignacio Aguilar* 498.

RANUNCULACEAE

Thalictrum Johnstonii Standl. & Steyerm., sp. nov.—Herba elata ca. 60 cm. alta, caule gracili subtereti ut videtur simplici glabro viridi; folia caulina 4–5 longipetiolata decomposita, petiolo usque 14 cm. longo gracili glabro basi late dilatato et amplexicauli, vagina ca. 1.5 cm. longa; foliola numerosa parva epeltata membranacea graciliter petiolulata, petiolulis lateralibus brevibus, terminalibus magis elongatis fere filiformibus; lamina suborbicularis vel irregulare rhombea vulgo 7–10 mm. longa et 5–8 mm. lata, supra viridis glabra, venis non elevatis, subtus vix pallidior glabra sed sparse et minutissime glandulosa, breviter vel interdum fere ad medium 2–3-loba, lobis obtusissimis vel subrotundatis et minute obtuse apiculatis; flores dioeci laxe paniculati, paniculis subpaucifloris ut videtur foliis brevioribus, pedicellis fere filiformibus valde elongatis; sepala ovalia vel late elliptica 2.5–3 mm. longa glabra minute glandulosa apice rotundata viridia purpurascentia; stamina numerosa, filamentis filiformibus ca. 7 mm. longis glabris, antheris linearibus subtortis 2 mm. longis.—Guatemala: Desconsuelo, Dept. Totonicapán, June 20, 1940, *J. R. Johnston* 1643 (type in Herb. Field Mus.).

This plant grows presumably in the sparse groves of the high region (about alt. 3,000 meters) so aptly named Desconsuelo. At least on a rainy day, when the wind is blowing strongly, and drifting mist and clouds across the meadows, it would be difficult to imagine a more dreary and forbidding landscape, although it must be admitted that on a sunshiny day the aspect is considerably more pleasant. Among Guatemalan species of *Thalictrum*, *T. Johnstonii* is easily recognized by its small, glabrous, and relatively broad leaflets.

Thalictrum Standleyi Steyermark, sp. nov.—Herba elata 1.5–2.5 m. alta, caule aliquanto fistuloso striato sparse pilis laxis villoso, ad nodos densius villoso; folia magna decomposita, petiolo brevi vel elongato basi vulgo breviter in vaginam latam expanso, sparse villoso vel fere glabro, petiolulis valde inaequalibus 1–6 cm. longis; foliola numerosa magna firme membranacea epeltata ovata vel late ovata, lateralia saepe paullo obliqua, magnitudine valde variabilia, plerumque 4–10 cm. longa et 2.5–6.5 cm. lata, acuminata vel longiacuminata, basi profunde cordata vel interdum tantum truncata, sinu lato vel fere clauso usque 12 mm. alto, toto margine fere ad apicem profunde grosseque crenato, rare subtriloba, crenaturis interdum iterum crenatis vel brevissime trilobis, supra glabra intense viridia, in sicco saepius lucida, nervis venisque prominentibus

et arcte reticulatis, subtus pallidiora, fere glabra sed saltem ad nervos prope basin laminae pilis paucis parvis glanduliferis onusta, nervis venisque insigniter elevatis et arcte reticulatis; flores polygamo-monoeci majusculi in paniculas magnas laxas foliaceo-bracteatas dispositi; sepala tenuia late ovata obtusa ca. 6 mm. longa sparse viscido-villosula vel fere glabra; stamina numerosa, filamentis gracillimis 5 mm. longis et ultra, antheris linearibus ca. 4.5 mm. longis apice subulato-apiculatis; achaenia juvenilia tantum visa valde asymmetrica substipitata oblique rostrata, glabra, stylo filiformi 1 cm. longo vel ultra.—Guatemala: Dept. San Marcos: Río Vega, near San Rafael and Guatemala-Mexico boundary, Volcán de Tacaná, alt. 2,500–3,000 meters, February 20, 1940, *Julian A. Steyermark* 36258 (type in Herb. Field Mus.). Between town of Tajumulco and Tecutla, northwestern slopes of Volcán de Tajumulco, shaded thickets along Quebrada Talskek, near top of barranco, alt. 1,800–2,500 meters, *Steyermark* 36821. Trail between Finca El Porvenir and San Sebastián, Volcán de Tajumulco, in *Abies* forest on upper slopes, alt. 1,300–4,000 meters, *Steyermark* 37067.—Dept. Quezaltenango: Mountains southeast of Palestina, damp, dense forest, alt. 2,700 meters, February, 1939, *Standley* 66346, 66338.

Leaves membranaceous, rich green or dull green above, gray-green or grass-green beneath and rugose; sepals green, purplish at the base; anthers pale yellow, turning purplish; filaments light green; style purple; sepals erect; anthers expanding first, the pistils later; nodes of the stem purplish.

It is impossible to suggest any particular relationship for this species, because it has no resemblance in foliage to any other member of the genus of which material has been examined. It is, in fact, probably the most distinct and easily recognized species of *Thalictrum*, and certainly the most distinctive in appearance of all American species. The leaflets are altogether unlike those of any other American *Thalictrum* in their combination of large size, deeply cordate bases, acuminate or long-acuminate apices, coarsely crenate or doubly crenate margins, and elevated, reticulate venation. The foliage somewhat resembles that of certain species of *Clematis*.

Thalictrum Steyermarkii Standl., sp. nov.—Herba erecta 2.5 m. alta fere glabra, caule crasso aliquanto fistuloso tereti glabro; folia inter maxima pinnatim decomposita longipetiolata, petiolo basi longivaginato, vagina 4.5 cm. longa et 3 cm. lata; foliola numerosissima, terminalibus usque 2 cm. longe et gracillime petiolulatis, lateralibus brevius petiolulatis, membranacea, ambitu valde variabilia,

late oblonga usque late ovata vel interdum cuneato-obovata, plerumque 2–3 cm. longa et 1–2 cm. lata, obtusa et apiculata, basi rotundata usque truncata, interdum integra sed saepius breviter vel profunde triloba, supra intense viridia, glabra vel minutissime granuloso-puberula, subtus paullo pallidiora et lutescentia glabra vel sparse et fere microscopice puberula, nervis venisque prominentibus gracillimis laxe reticulatis; flores ut videtur dioeci paniculam magnam laxe multifloram foliatam efformantes, ramis gracillimis minute farinoso-puberulis vel fere omnino glabris, pedicellis capillaribus maxime elongatis plerumque 4–6 cm. longis; folliculi valde asymmetrici sessiles ca. 6 mm. longi et 2.5–3 mm. lati, basi acuti, apice in stylum filiformem usque 9 mm. longum abrupte angustati, minute puberuli vel fere glabri, grosse longitrorsum costati.—Guatemala: Dept. San Marcos, Volcán de Tajumulco, barrancos south and west of town of Tajumulco, alt. 2,300–2,500 meters, moist slopes around seepage at base of barranco, February 25, 1940, *Julian A. Steyermark* 36575 (type in Herb. Field Mus.). Wet meadow, common but sterile, Barranco Eminencia, above San Rafael Pie de la Cuesta, alt. 2,100–2,400 meters, March, 1939, *Standley* 68465. Between Todos Santos and Finca El Porvenir, lower to middle slopes of Volcán de Tajumulco, alt. 1,300–3,000 meters, *Steyermark* 36989; on slopes along a quebrada; an herb 2.5 meters tall. Between La Vega ridge along Río Vega and northeast slopes of Volcán de Tacaná, to 3 miles from Guatemala-Mexico boundary, vicinity of San Rafael, alt. 2,500–3,000 meters, shaded banks of slopes bordering escarpment of stream, *Steyermark* 36191; an herb 1.5 meters tall. Between Canjulá and La Unión Juárez, near southeast portion of Volcán de Tacaná, alt. 2,000–3,000 meters, *Steyermark* 36483.—Dept. Quezaltenango: sandy *Alnus* forest, Cumbre de Tuilacán, southwest of San Martín Chile Verde, alt. 2,400 meters, March, 1940, *Standley* 67837.

Some of the collections listed are sterile, but their foliage is exactly like that of the type. The species is notable for the almost complete absence of pubescence, and more especially for the numerous, greatly elongate, and almost capillary pedicels.

MENISPERMACEAE

Disciphania calocarpa Standl. Field Mus. Bot. 4: 305. 1929. *D. coriacea* Standl. Carnegie Inst. Wash. Publ. 461: 55. 1935.—As more material of this genus accumulates from Central America, it becomes apparent that the collections are variable, and almost cer-

tainly represent a single species. The following collections are at hand: British Honduras: Río Grande, *Schipp* S458; type of *D. coriacea*.—Guatemala: Dept. Izabal: Between Escobas and Montaña Escobas, across bay from Puerto Barrios, alt. 1–100 meters, along stream, *Steyermark* 39311. South-facing lower ridges of Cerro San Gil (El Ermitaño), opposite Cayuga, alt. 30–500 meters, *Steyermark* 39493; a vine with corky bark; fruiting inflorescence pendent; fruit pale green, turning red, 1.8 cm. long, 1.5 cm. broad. Escoba, in wet forest, *Standley* 72916.—Honduras: Lancetilla Valley, Dept. Atlántida, alt. 20–600 meters, *Standley* 52817 (type of *D. calocarpa*), 54128. Foothills back of La Ceiba, Dept. Atlántida, *Yuncker, Koepper & Wagner 8799*.—Costa Rica: Tres Esquinas, Chitaría, alt. 700 meters, in 1935, *Fernando Solís* 222, 242.

Hyperbaena guatemalensis Standl. Journ. Wash. Acad. Sci. 15: 475. 1925.—The type is *Popenoe* 965, from Barranquillo, Dept. El Progreso, Guatemala. Several additional collections, all in fruit, are conspecific: Guatemala: Guastatoya, Dept. Jalapa, alt. 1,350 meters, January, 1908, *Kellerman* 7807. Dept. Chiquimula, along Río Tacó, between La Laguna and Chiquimula, alt. 500–1,000 meters, October, 1939, *Steyermark* 30742, 30754; a tree of 9–12 meters; leaves coriaceous, dark green above, the margins undulate and crisped. Local name, Grenadilla.

Hyperbaena Steyermarkii Standl., sp. nov.—Frutex scandens, caulibus crassiusculis teretibus in sicco fuscis, internodiis brevibus vel elongatis, novellis densissime pilis longis patentibus intertextis ochraceis vel sordidis tomentosis, tomento interdum deciduo; folia majuscula longe vel brevius petiolata coriacea, petiolo gracili 2–9 cm. longo dense piloso-tomentoso vel interdum glabrato, infra laminam paullo incrassato et subgeniculato; lamina fere orbicularis usque late elliptica vel oblongo-elliptica 9–14 cm. longa 4–11 cm. lata, apice rotundata et breviter cuspidato-acuminata vel sensim abrupteve acuminata, basi subtruncata usque anguste rotundata, supra in sicco fuscescens, ad nervos saltem medium pilosa, aliter glabra, subtus pallidior et saepe brunnescens ubique dense pilis patentibus velutino-pilosa, e basi 5-nervia, nervis exterioribus brevibus, 2 interioribus fere ad apicem laminae protractis, omnibus prominentibus, costa utroque latere supra medium nervos ca. 3 emittente, venis plerumque transversis et plus minusve parallelis conspicuis; flores feminei spicati, spicis dense vel subremote pauci- vel multifloris sessilibus axillaribus usque 5 cm. longis, rhachi dense pilosa, floribus arcte sessilibus; sepala 3 rotundato-ovata ca. 3 mm.

longa subpatentia obtusa, extus dense pilosulo-tomentosa, intus glabra; ovarii carpella 3 densissime fusco-pilosa.—Guatemala: Dept. Izabal, Río Dulce, between Livingston and 6 miles up the river, on north side (right-hand side going up river), at sea level, April 14, 1940, *Julian A. Steyermark* 39454 (type in Herb. Field Mus.). Also No. 39461 from the same region.

The known Central American species of *Hyperbaena* have increased in number rapidly during the past few years. Several quite distinct types are represented among them, but many of the species are separated by rather slight characters whose value remains to be proved. The present plant, however, is conspicuously different from any reported previously, particularly in its abundant pubescence, and in its sometimes almost perfectly circular leaves. The leaves vary greatly in shape, those of the second collection cited being much narrower than in the type.

CAPPARIDACEAE

Cleome ephemera Brandeg. Proc. Calif. Acad. II. 3: 112. 1891.—The plant is a slender and rather delicate annual, noteworthy for its simple, narrowly linear leaves. It was described from southern Lower California, and several collections are at hand from the State of Guerrero, Mexico, and doubtless it grows in other states of that country. It is somewhat of a surprise to find a Lower California species extending into Central America, although not particularly remarkable, but one collection of this plant has now been made in Guatemala: Dept. Zacapa, rocky hills in vicinity of Santa Rosalía, 2 miles south of Zacapa, alt. 200 meters, October 7, 1939, *Steyermark* 29281. The flowers are yellow and brown.

SAXIFRAGACEAE

Hydrangea Steyermarkii Standl., sp. nov.—Frutex scandens epiphyticus, ramis crassis fusco-ferrugineis dense paleis linearibus crassis patentibus brunnescentibus indutis et quoque pilis stellatis brunnescentibus laxe tomentosis, internodiis plerumque brevibus; folia majuscula vel subparva petiolata coriacea, petiolo 1–1.5 cm. longo crassiusculo laxe sparseque stellato-tomentoso et sparse paleaceo; lamina cuneato-obovata usque obovato-oblonga, supra medium latissima, 6.5–17 cm. longa 3.5–9 cm. lata, apice rotundata vel obtusissima et interdum apiculata, basin versus cuneato-angustata vel interdum subobtusa et abrupte breviterque contracta, margine arcte vel remote denticulato, supra saltem in statu adulto glabra,

costa subimpressa, venis prominulis arcte reticulatis, subtus pallidior, primo sat dense pilis subadpressis intertextis ochraceis tomentosa, cito glabrata, costa crassiuscula prominente, nervis lateralibus utroque latere ca. 9 prominentibus obliquis irregularibus supra medium furcatis, venis prominulis arcte reticulatis; inflorescentiae ut videtur plerumque axillares dense multiflorae ca. 4.5 cm. altae et 9 cm. latae, radiis 5–8 vel ultra sat dense pilis stellatis plerumque breviter stipitatis brunneis indutis, pedunculo communi ca. 1.5 cm. longo, bracteis basalibus fere 2 cm. longis latis dense brunneo-tomentosis, floribus sessilibus vel breviter pedicellatis secundis; hypanthium semiglobosum fere 3 mm. latum glabrum; sepala semi-orbicularia vix ultra 1 mm. longa pallida; petala caduca.—Guatemala: Dept. San Marcos: Along Quebrada Canjulá, between Sibinal and Canjulá, Volcán de Tacaná, alt. 2,200–2,500 meters, February 18, 1940, *Julian A. Steyermark* 36044 (type in Herb. Field Mus.). Río Vega, near San Rafael and Guatemala-Mexico boundary, Volcán de Tacaná, alt. 2,500–3,000 meters, *Steyermark* 36250 (sterile); a liana; leaves coriaceous, dull, dark green above, pale beneath; stems chocolate-brown. Between Canjulá and La Unión Juárez, near southeast portion of Volcán de Tacaná, alt. 2,000–3,000 meters, forested barranco slopes of Río Tonaná, *Steyermark* 36411; sterile.

Juvenile plants of what is probably this species, but very different in appearance from adult plants, and to be recognized as belonging to the genus only by the characteristic pubescence of stellate hairs, are common in many parts of the Guatemalan Occidente, growing upon tree trunks. Flowering plants have been found but once.

In southern Central America three species of *Hydrangea* are known, but none has been reported definitely from northern Central America. The genus is known to occur also in Mexico. Whether the *Hydrangea* of southern Mexico is *H. Steyermarkii* or whether it is a distinct and undescribed species remains to be determined. It has been reported as *H. Oerstedii* Briq. and as *H. peruviana* Moric., but it is safe to assume that neither of these species ranges so far north as Mexico. *H. Steyermarkii* is related to the Costa Rican *H. diplostemona* (D. Sm.) Standl., but in that the leaves are broadest at or near the middle, and the pubescence of the branches is not at all paleaceous.

CONNARACEAE

Connarus lentiginosus Brandeg. Univ. Calif. Publ. Bot. 6: 186. 1915.—Heretofore the species has been known only from the

original material, from the region of Huitla, Chiapas, Mexico. While we have seen no authentic material, the following Guatemalan collection agrees fully with the published description: Dept. San Marcos, Río Mopá, below Rodeo, alt. 600 meters, in wet thicket, *Standley* 68790; a large vine, the flowers pale yellowish.

LEGUMINOSAE

Acacia Calderonii Standl. Journ. Wash. Acad. Sci. 13: 439. 1923. *Acaciella Calderonii* Britt. & Rose, N. Amer. Fl. 23: 99. 1928.—The type was collected near Chalchuapa, Salvador, close to the Guatemalan boundary, but heretofore the species has been known only from Salvador. Recently it has been found in Guatemala: Dept. Chiquimula, exposed, grassy slopes of Mount Tojás, near village of Sasmo, about 1 mile northwest of Chiquimula, alt. 420–520 meters, October, 1939, *Steyermark* 30203; a shrub a meter high, the flowers white. Dept. Zacapa, lower slopes of Sierra de las Minas, along trail above Río Hondo, alt. 250–900 meters, *Steyermark* 29515; a shrub of 1.5 meters, the flowers creamy white. It is probable that the plant to which this specific name is given is only a form of *Acacia polypodioides.*

Acacia Gentlei Standl. Bot. Ser. Field Mus. 22: 77. 1940.—Immediately after publication of this British Honduras species, there came to hand a second collection, from Guatemala: Dept. Izabal, Río Dulce, 2–4 miles west of Livingston, on south side (left-hand side going up river), at sea level, April, 1940, *Steyermark* 39546. A tree, the flowers pale yellow, the fruits pendent. The very numerous flower spikes are long-pedunculate, very dense, about 3 cm. long and 3.5 mm. thick. The small, peltate bracts are soon pushed aside by the expanding flowers and are scarcely if at all apparent when the corollas are open. The fruits match exactly those of the British Honduras type, being about 22 cm. long and 11 mm. wide.

Acacia polypodioides Standl. Contr. U. S. Nat. Herb. 20: 184. 1919. *Acaciella polypodioides* Britt. & Rose, N. Amer. Fl. 23: 98. 1928.—The type was collected in Chiapas, and the species has been known also from Oaxaca and Veracruz. It extends to eastern Guatemala: Dept. Chiquimula, exposed, grassy slopes of Mount Tojás, near the village of Sasmo, about 1 mile northwest of Chiquimula, alt. 420–520 meters, October, 1939, *Steyermark* 30202. A shrub a meter high, its flowers white.

Aeschynomene nicaraguensis (Oerst.) Standl. Trop. Woods 34: 41. 1933. *Brya nicaraguensis* Oerst. Kjob. Vid. Medd. 13. 1853.

A. Calderoniana Standl. Journ. Wash. Acad. Sci. 14: 93. 1924.—The type of *Brya nicaraguensis* was collected in Nicaragua, that of *Aeschynomene Calderoniana* in Salvador. The same species extends to Guatemala: Dept. Chiquimula, base of slopes along Río Grande (Río Concepción), Mt. Socorro, above Finca San José, southeast of Concepción de las Minas, alt. 1,200–1,700 meters, November, 1939, *Steyermark* 31117. A shrub 2.5 meters high; petals dull yellow, the standard striped with dull purple.

Clitoria mexicana Link, Enum. Pl. 2: 235. 1822.—Most of the Mexican and Central American Clitorias are fairly common and widely distributed, but this one is rather meagerly represented in herbaria. The species is recorded for Guatemala (Contr. U. S. Nat. Herb. 23: 494. 1922), but it is worth while to report two collections made recently in that country: Dept. Sololá, a vine on dry ridge southeast of Pueblo San Jorge, *W. R. Hatch & C. L. Wilson* 302. Dept. Zacapa, pine-covered slopes, Sierra de las Minas, along trail between Río Hondo and summit of mountain at Finca Alejandria, alt. 1,000–1,500 meters, *Steyermark* 29636; plants procumbent; leaves glaucous-silvery beneath.

Clitoria multiflora Mart. & Gal. Bull. Acad. Brux. 10, pt. 2: 188. 1843.—The species is rather widely distributed in southern and western Mexico, but has not been known heretofore from Central America. The following recent collections show that its range extends into Guatemala: Dept. Chiquimula, rocky, wooded slopes along river, Cerro Brujo, in vicinity of Río Negro, below Montaña Montenegro, near village of Brujo, alt. 1,500–2,000 meters, November, 1939, *Steyermark* 30925. Dept. Chiquimula, Montaña Castilla, vicinity of Montaña Cebollas, along Río Lucía Saso, 3 miles southeast of Quezaltepeque, alt. 1,200–1,500 meters, *Steyermark* 31258; plants sprawling; flowers whitish, with purplish stripes on the standard; leaves thin, dull green above, pale, silvery gray beneath; growing on upper part of pine-clad slope below high cliffs. Dept. Zacapa, pine forest, Sierra de las Minas, near summit of ridge below Finca Alejandria, alt. 1,700–2,000 meters, *Steyermark* 29756.

Dalbergia pacifica Standl. & Steyerm., sp. nov.—Arbor 12-metralis vel ultra, ramulis sordido-ochraceis elevato-lenticellatis subrimosis glabris vel glabratis; folia magna longipetiolata, rhachi cum petiolo gracili tereti usque 22 cm. longa; foliola usque 10 (vel ultra?) rigide et crassiuscule membranacea 4–6 mm. longe petiolulata, oblonga ad lanceolato-oblonga vel inferiora ovata, 6.5–12 cm.

longa 2.5–5 cm. lata, apicem obtusum et breviter emarginatum versus paullo angustata, basi obtusa usque late rotundata, inaequalia, inferioribus plus minusve reductis, supra in sicco fuscescentia lucida glabra, venis nervisque prominulis atque arcte reticulatis, subtus paullo pallidiora, ubique dense sed minutissime adpresso-pilosula vel fere sericea, costa tenera elevata, nervis lateralibus tenerrimis prominentibus subarcuatis angulo latiusculo adscendentibus, venis prominulis laxe reticulatis; inflorescentiae axillares racemosae vel racemoso-paniculatae, breviter pedunculatae, racemis ut videtur (in statu fructifero tantum visis) laxe paucifloris ad 6 cm. longis, pedicellis fructiferis crassis 5–8 mm. longis; legumen anguste oblongum vel lineari-oblongum 7–12 cm. longum 2 cm. latum, obtusum atque breviter mucronato-apiculatum, basi sensim vel abrupte angustatum et in stipitem 1–2 cm. longum attenuatum, inter semina interdum constrictum, glabrum, venis prominentibus arcte reticulatis; semina vulgo 1–2.—Guatemala: Roadside, Cocales, Dept. Suchitepéquez, alt. 215 meters, January 5, 1939, *Paul C. Standley* 62109 (type in Herb. Field Mus.).

Local name, Granadillo. This is another of the rather numerous cocobola trees of Central America, whose hard and fine-grained wood is employed in the United States for making knife handles and other small articles. Its closest relative is *Dalbergia lineata* Pittier, of the Pacific coast of Costa Rica, with which eventually it may have to be united. In that, however, the leaflets are very densely covered beneath with much longer hairs that are not closely appressed, and there is abundant pubescence upon the inflorescence. More ample material will be needed to determine the status of the various related forms.

Desmodium metallicum (Rose & Standl.) Standl. Field Mus. Bot. 11: 161. 1936. *Meibomia metallica* Rose & Standl. Contr. U. S. Nat. Herb. 16: 214. 1913. *Galactia nitida* Standl. Carnegie Inst. Wash. Publ. 461: 62. 1935.—The species seems to be an exceptionally distinct one, of the subgenus *Nephromeria*, noteworthy for the densely yellow-sericeous under surface of the leaflets. The type was collected at Cahabón, Alta Verapaz, Guatemala, and so far as we know, the species has been recorded only from the type specimen. The following collections are in the Herbarium of Field Museum: Mexico: Palenque, in 1895, *Allison V. Armour* 14, 15.—British Honduras: Camp 32, British Honduras-Guatemala Boundary Survey, alt. 810 meters, in forest shade, *Schipp* S680 (type of *Galactia nitida*); a vine 2.5 meters long; flowers light blue.—Guatemala:

Dept. Alta Verapaz: Finca Volcán, a vine in second growth, alt. 810 meters, *C. L. Wilson* 257.—Dept. Izabal: Río Dulce, between Livingston and 6 miles up river, on north side, at sea level, *Steyermark* 39422; a vine; leaves firmly membranaceous, rich grass-green above, gray-green beneath; calyx lilac-pink; standard and keel white, the wings violet in upper half, white along lower side. The type specimen of *Galactia nitida* bears flowers only, and not many of those, but the uncinate hairs of the stem should have referred the plant at once to its proper genus. Although no fruits are available for the British Honduras plant, the foliage indicates that it is rather certainly referable to this species of *Desmodium*.

Eriosema violaceum (Aubl.) E. Mey. Comm. Pl. Afr. Austr. 128. 1835. *Cytisus violaceus* Aubl. Pl. Guian. 766. *pl 306*. 1775.—Many *Eriosema* species have a wide range, and it is therefore not remarkable that this one should be discovered in Central America. Previously it has been found in various parts of the West Indies, in the Guianas, and in Brazil, but it has not been reported, so far as we know, from the North American mainland. Guatemala: Dept. Izabal, prairie near jungle border, between Milla 49.5 and Cristina, alt. 70 meters, *Steyermark* 38683; a shrub 1–1.5 meters tall; leaves firmly membranaceous, ascending, olive-green above, paler grass-green beneath; calyx pale green; corolla butter-yellow.

Galactia acuminata Steyermark, Bot. Ser. Field Mus. 22: 144. 1940.—Recently described from Chiapas, Mexico, this plant has been found also in Guatemala: Dept. San Marcos: Between Todos Santos and Finca El Porvenir, lower to middle slopes of Volcán de Tajumulco, alt. 1,300–3,000 meters, *Steyermark* 37003; leaves firmly membranaceous, rich green on both sides. Forested slopes along Quebrada Talskek, between Tajumulco and Tecutla, northwestern slopes of Volcán de Tajumulco, alt. 1,800–2,500 meters, *Steyermark* 36840. Rocky slopes above Finca El Porvenir, along Río Cabús to within 2 miles of Cueva de las Palomas, south slopes of Volcán de Tajumulco, alt. 1,300–1,500 meters, *Steyermark* 37942.—Dept. Quezaltenango: Between Finca Pireneos and Los Positos, lower slopes of Volcán de Santa María, alt. 1,300–1,500 meters, *Steyermark* 33745; a vine in thickets. Quebrada San Gerónimo, ridge top, lower slopes of Volcán de Santa María, alt. 1,300–2,000 meters, *Steyermark* 33451.

Indigofera miniata Ortega, Dec. 98. 1798. *I. ornithopodioides* Schlecht. & Cham. Linnaea 5: 577. 1830.—The species ranges widely,

from southern Texas over a large part of Mexico, besides occurring in southern Florida and in Cuba. Apparently it has not been reported from Central America, but recently it was found in Guatemala: Dept. Zacapa, rocky hills near Santa Rosalía, 2 miles south of Zacapa, alt. 200 meters, October, 1939, *Steyermark* 29274. Corolla red-orange.

Inga subvestita Standl. Bot. Ser. Field Mus. 22: 27. 1940.—Based upon a single collection from Alta Verapaz, Guatemala, the species has now been collected in another department of the same country: Dept. Izabal, between Bananera and La Presa, in Montaña del Mico alt. 40–300 meters, March, 1940, *Steyermark* 38192; a shrub, in flower; leaves chartaceous, rich green above, paler green beneath; pubescence brown.

Lonchocarpus Castilloi Standl. Trop. Woods 32: 15. 1932.—When published, only two collections were available of this species, one from Freshwater Creek Reserve, British Honduras, the other from Uaxactún, Petén, Guatemala. During the last few years a number of other collections have been made in these two countries, and the tree has been discovered in Tabasco, Mexico. Mexico: Reforma, Balancán, Tabasco, *Matuda* 3217 (determined by Lundell); a tree of 15 meters, the trunk 35 cm. in diameter.—British Honduras: El Cayo District, Cohune Ridge, advanced forest, *Lundell* 6490; local names Cabbage-bark and Manchich; a tree of 33 meters, the trunk 45 cm. in diameter. Xiabe, Corozal District, *Gentle* 850. Corozal District, *Gentle* 476; growing on high ridge; trunk 15 cm. in diameter. Without special locality, *A. Castillo* in 1933; *Castillo* 61, 83; local names Cabbage-bark and Black cabbage-bark.—Guatemala: Dept. Izabal, Escoba, across the bay from Puerto Barrios, in wet forest, *Standley* 72864 (sterile); a small tree.

Lonchocarpus Salvinii Harms, Repert. Sp. Nov. 17: 323. 1921.—The type of this unusually well marked species was collected by Salvin in 1873–74 on the Volcán de Fuego, Guatemala. A photograph and fragment of the Berlin type are in the Herbarium of Field Museum, and there is in the same herbarium an excellent specimen of the type collection. Of the several collections made of the same tree in 1938–39, some come from what is probably the type locality, the road between Antigua and Escuintla. Guatemala: Dept. Escuintla: San Antonio Jute, alt. 780 meters, dry thicket, *Standley* 64872; a large shrub or small tree, common. Below Las Lajas, alt. 900–1,200 meters, a large tree in a finca, *Standley* 64752; local name Chaperno.—Dept. Sacatepéquez: Near Las Lajas, growing in cafe-

tales and in forest, common, alt. 1,200 meters, *Standley* 58059; a tree of 12–20 meters. The purple flowers, produced in great abundance in late November, make the tree a showy and unusually handsome one.

Lonchocarpus trifoliolatus Standl. Journ. Wash. Acad. Sci. 15: 475. 1925.—Easy of recognition because of its trifoliolate, densely and softly pubescent leaves, this tree was described from material gathered at Chalatenango, Salvador by Dr. Salvador Calderón. Conspecific is the following Guatemala collection: Dept. Zacapa, a tree along stream on slopes of arroyo, rocky hills near Santa Rosalía, 2 miles south of Zacapa, alt. 200 meters, in flower, October, 1939, *Steyermark* 29290; flowers with mixed coloring of dark and light purple. There is some probability that *L. trifoliolatus* is synonymous with *L. phaseolifolius* Benth., of Tehuantepec, Mexico.

Machaerium fruticetorum Standl. & Steyerm., sp. nov.—Frutex vel arbor 3–9-metralis, ramis gracilibus ochraceis vel fuscescentibus dense elevato-lenticellatis glabris, internodiis plerumque brevibus; stipulae cito deciduae, non visae; folia modica petiolata vulgo 6–7-foliolata, rhachi cum petiolo 6–13 cm. longa gracili subtereti glabra plus minusve flexuosa, petiolulis crassis plerumque 3–4 mm. longis, saepe prope apicem suberoso-incrassatis; foliola tenuiter coriacea anguste lanceolato-oblonga usque oblonga, vel infima interdum ovata, 4.5–9 cm. longa, vulgo 1.5–3 cm. lata, interdum paullo latiora, longe angusteque acuminata, apice ipso obtuso, basi cuneato-acuta usque rotundata, supra in sicco fuscescentia sublucida, costa anguste impressa, nervis venisque prominulis et arcte reticulatis, utrinque glabra, subtus fusco-brunnescentia sublucida, costa tenera prominente, nervis venisque prominulis atque arcte reticulatis; racemi axillares simplices in statu florifero ut videtur foliis multo breviores, rhachi gracili dense brunneo-pilosula, floribus sessilibus vel brevissime pedicellatis; legumen 6–10 cm. longum 1.7–2.5 cm. latum anguste 6–12 mm. longe stipitatum, primo ut videtur dense brunneo-sericeum, in statu adulto glabratum, laxe reticulato-venosum, subarcuatum, ala terminali apice rotundata vel obtusissima.—Guatemala: Dept. Chiquimula, between Chiquimula and La Laguna, alt. 500–1,000 meters, October 27, 1939, *Julian A. Steyermark* 30689 (type in Herb.Field Mus.). Dept. Zacapa, dry thickets near divide on road from Zacapa to Chiquimula, alt. 660 meters, April, 1939, *Standley* 71975 (sterile). Dept. Jalapa, along quebrada near Zapote, 1 mile northeast of San Pedro Pinula, alt. 1,500 meters, December, 1939, *Steyermark* 32954.—Salvador: Dept. Santa Ana, brushy

hillside near Santa Ana, alt. 655–800 meters, January, 1922, *Standley* 19702.

Local name at Chiquimula, Juruguay. Evidently related to *Machaerium Pittieri* Macbr. (*M. latifolium* Pittier), and perhaps ultimately reducible to its synonymy, but in that the leaflets normally are fewer, much broader, and on relatively longer petiolules. In foliage characters the two species are so unlike that it seems probable that flowers also will supply differentiating characters, when those of *M. fruticetorum* have been collected.

Tephrosia lanata Mart. & Gal. Bull. Acad. Brux. 10, pt. 2: 48. 1843.—In Mexico this rather handsome plant is widely distributed, but it has not been noted previously for Central America. The following collections have been made in the Oriente of Guatemala: Dept. Chiquimula, pine forest, Socorro Mountain, between Finca San José and Montaña Nube, alt. 1,200–1,700 meters, *Steyermark* 30969; a shrub with buff-brown stems; flowers dark pink; leaves dark green above, soft gray-buff beneath. Dept. Jalapa, Montaña Durazno, 2 miles east of San Pedro Pinula, alt. 1,400–1,900 meters, *Steyermark* 32997; local name Choreco; plants 60–90 cm. tall, suffruticose at the base; flowers rose-purple.

Tephrosia nicaraguensis Oerst. in Benth. & Oerst. Vid. Medd. 1853: 6. 1853.—In *North American Flora* (24: 167. 1923) the species, first collected in savannas between Granada and Masaya, Nicaragua, is reported by Rydberg from Nicaragua and Costa Rica. The following Guatemalan specimens appear to be conspecific: Dept. Jutiapa, low mountains west of Jutiapa, alt. 900 meters, *Standley* 60565; growing in pine forest. Dept. Chiquimula, Caracol Mountain, about 1.5 miles north of Quezaltepeque, alt. 1,200–1,400 meters, growing in dry, open, rocky slopes in the openings of the characteristic pine woods of the region, *Steyermark* 31375.

Zollernia Tango Standl. Trop. Woods 19: 6. 1929.—The tree, known in British Honduras by the name of Tango, has been recorded for both that country and Honduras. Naturally to be expected in intervening Guatemala, it has not been collected there until recently: Dept. Izabal, Río Dulce, between Livingston and 6 miles up river, on north side (right-hand side going up river), at sea level, *Steyermark* 39391; a tree; flowers very sweet-scented, with an odor similar to that of sweet peas; petals white; calyx pale greenish white; stamens erect, white; leaves subcoriaceous, rich, dull green above, paler, dull green beneath.

OXALIDACEAE

Oxalis stenomeres Blake, Contr. U. S. Nat. Herb. 24: 8. 1922. —The type of this Guatemalan species was collected between Los Amates and Izabal, *Blake* 7791. Although we have not seen the type specimen, the following new collection evidently is conspecific: Dept. Izabal, between Milla 49.5 and ridge 6 miles from Izabal, Montaña del Mico, alt. 65–600 meters, on pine slopes, *Steyermark* 38557; flowers yellow; stems wine-red-purple; leaves membranaceous, rich, dark green above, paler green beneath. The plant probably is a perennial rather than an annual, as described. The leaflets are wider than those of the type, and the petioles average much longer than described.

ERYTHROXYLACEAE

Erythroxylon fiscalense Standl. Bot. Ser. Field Mus. 22: 33. 1940.—Known previously only from the type, obtained at Fiscal, Dept. Guatemala, Guatemala. Other collections have been obtained from the same country: Dept. Chiquimula, Cerro Tixixí, 3–5 miles north of Jocotán, alt. 500–1,500 meters, dry, shrubby thickets one-fourth the way up the slopes, *Steyermark* 31661; a shrub 1.5 meters tall. Dept. Zacapa, rocky slopes near Santa Rosalía, alt. 250–300 meters, *Steyermark* 29013; a shrub of 2.5 meters; fruit carmine-red.

Erythroxylon tabascense Britton, N. Amer. Fl. 25: 66. 1907.—The range of *E. tabascense* has been known to include Tabasco and British Honduras. Only recently has it been collected in Guatemala, but there it ranges more widely than one might have expected: Dept. Izabal: Livingston, in swampy second-growth, at sea level, a low tree, *C. L. Wilson* 366. Near Puerto Barrios, wet thickets, *Standley* 73076; a shrub of 1.5 meters; leaves very lustrous; fruit bright yellow.—Dept. San Marcos: Río Mopá, below Rodeo, alt. 600 meters, *Standley* 68773; a tree of 4.5 meters, in wet forest. Finca El Porvenir, on Potrero Matasán, along Río Cabús, Volcán de Tajumulco, alt. 1,000–1,300 meters, *Steyermark* 37553; a tree of 9 meters; leaves subcoriaceous, brick-green above, paler green beneath; fruit pale green, turning orange.

RUTACEAE

Zanthoxylum foliolosum Donn. Smith, Bot. Gaz. 18: 1. 1893. *Z. suaveolens* Lundell, Amer. Midl. Nat. 20: 237. 1938.—The type of *Z. foliolosum* was collected at San Rafael, Dept. Sacatepéquez, Guatemala, on the road between Antigua and Guatemala. The following recent collections are conspecific: Mexico: Laguna Salina,

Montecristo, Chiapas, *Matuda* 1933; type collection of *Z. suaveolens*. —Guatemala: Dept. Huehuetenango, bushy mountain side, Soloma, alt. 2,310 meters, *Skutch* 1038; a scrambling vine; flowers greenish white, the fruit red. Dept. San Marcos, oak forest, Puente de Nahuatl-aa, near San Marcos, alt. 2,280 meters, *Standley* 66209; a shrub of 2.5 meters. Dept. Quiché, forested barranco south of Chichicastenango, alt. 1,830–1,880 meters, *Standley* 62423; a shrub of 2 meters, common; fruit green or red. Dept. Baja Verapaz, damp forest, near the divide north of Santa Rosa, alt. 1,650 meters, *Standley* 69903; a shrub of 2.5 meters.

Zanthoxylum Harmsianum (Loes.) P. Wilson, Bull. Torrey Club 37: 86. 1910. *Fagara Harmsiana* Loes. Bull. Herb. Boiss. II. 3: 96. 1903.—A photograph of the type, *Seler* 2343, is in the Herbarium of Field Museum (Neg. 12444). The specimen was collected in the Department of Chimaltenango, Guatemala, in the region of Santa Elena on the mountains above Tecpám. There it is common, growing in the dense *Cupressus* forest which is perhaps the finest in Guatemala. Since the species is a rather rare one, it is worth while to place on record several recent collections, which indicate a rather wide range for it: Mexico: Volcán de Tacaná, Chiapas, western slopes, alt. 2,800 meters, *Matuda* 2918 (determined by Lundell).—Guatemala: Dept. San Marcos, along Quebrada Canjulá, between Sibinal and Canjulá, Volcán de Tacaná, alt. 2,200–2,500 meters, *Steyermark* 36035; a vine, climbing in a tree; flowers greenish. Dept. Chimaltenango, Cerro de Tecpám, region of Santa Elena, alt. 2,700 meters, in dense *Cupressus* forest, *Standley* 58688; a common tree or shrub of 3–6 meters. The stout prickles with which the shrub is so abundantly armed make it a most offensive obstruction in the dense thickets where it grows.

Zanthoxylum nubium Standl. & Steyerm., sp. nov.—Frutex scandens glaber, ramis gracilibus flexuosis fusco-brunnescentibus rimosis subteretibus, novellis olivaceis, internodiis brevibus; aculeis sparsis 2–3 mm. longis recurvis basi incrassatis; folia inter minora imparipinnata 7–14 cm. longa petiolata, rhachi subtereti olivacea aculeis parvis recurvis armata, supra profunde sulcata; foliola plerumque 17–21 sessilia integra, lateralia ovalia vel oblongo-ovalia 17–22 mm. longa 8–11 mm. lata obtusa, basi rotundata et interdum subinaequalia, subtus ima basi biglandulosa, supra intense viridia, costa impressa, nervis venisque obscuris, subtus pallidiora densissime minuteque puncticulata, costa gracili elevata, nervis obscuris, venis obsoletis; foliolum terminale ovato-oblongum 25–28 mm. longum

subacuminatum; paniculae laterales et axillares ca. 5 cm. longae laxe pauciflorae, ramis gracilibus, pedicellis usque 12 mm. longis rectis; sepala 4 minuta; folliculi vulgo 2 subglobosi 5 mm. longi (immaturi) grosse glandulosi apice rotundati.—Guatemala: Dept. Chiquimula, cloud forest on top of Volcán de Quezaltepeque, 3–4 miles northeast of Quezaltepeque, alt. 1,500–2,000 meters, November 8, 1939, *Julian A. Steyermark* 31430 (type in Herb. Field Mus.).

The relationship is with *Z. foliolosum* Donn. Smith, in which the relatively broader but usually smaller leaflets are conspicuously crenate and almost truncate at the apex. Similar, also, is the Honduran *Z. limoniodorum* Standl., but that, too, has coarsely crenate leaflets.

POLYGALACEAE

Bredemeyera lucida (Benth.) Benn. in Mart. Fl. Bras. 13, pt. 3: 51. 1874. *Catacoma lucida* Benth. in Hook. Journ. Bot. 4: 101. 1842.—The range of this vine is discontinuous, so far as known at present. It ranges widely in Amazonian Brazil and the Guianas, then re-appears in northern Central America. Previously it has been noted from British Honduras and the Department of Petén, Guatemala. A recent collection indicates that it extends into the Department of Izabal, on the north coast of Guatemala: Between Milla 49.5 and ridge 6 miles from Izabal, Montaña del Mico, alt. 65–300 meters, *Steyermark* 38636; a shrub or a shrubby vine; leaves usually subcoriaceous, of a dark, rich green above, and of a paler, dull green beneath; fruit pale green; growing usually on the upper and drier slopes of the mountain sides.

EUPHORBIACEAE

Amanoa grandiflora Muell. Arg. Flora 55: 2. 1872.—Previously this tree has been reported in North America from British Honduras; otherwise it is known from Surinam and British Guiana. The collections cited below prove its extension to Guatemala, and it is to be expected along the Atlantic coast of southern Central America. Guatemala: Dept. Alta Verapaz: Virgin forest, Rubelpec, Finca Seamay, *C. L. Wilson* 188; a small tree.—Dept. Izabal: Near Puerto Barrios, wet thicket, a shrub, *Standley* 73119, 73120. Bank of Río Tatín, near Río Dulce, a medium-sized forest tree, *Wilson* 392. Bank of Río Dulce, a tree, *Wilson* 162. Seashore around Punta Palma, across the bay from Puerto Barrios, at sea level, *Steyermark* 39810; a small tree; leaves coriaceous, dark green above, pale green beneath.

Bernardia mollis Lundell, Contr. Univ. Mich. Herb. 4: 12. 1940.—The type was collected in the state of Chiapas, Mexico, on the northern slopes of Volcán de Tacaná, at 2,100 meters. During 1940 the same species was found in western Guatemala: Dept. San Marcos, barranco slopes between town of Tajumulco and Tecutla, northwestern slopes of Volcán de Tajumulco, alt. 1,800–2,500 meters, *Steyermark* 36804; a shrub of 3 meters; leaves chartaceous, dull green above, pale green beneath. The young fruits are subglobose, 1 cm. wide and slightly longer, covered with a very dense, velvety, fulvous pubescence.

AQUIFOLIACEAE

Ilex anodonta Standl. & Steyerm., sp. nov.—Frutex vel arbor usque 12 m. alta, ramulis crassis vel crassiusculis in sicco fuscis vel brunnescentibus fere omnino glabris subteretibus inconspicue lenticellatis, internodiis brevibus; stipulae usque 3.5 mm. longae lanceolatae vel subulatae deciduae; folia modica breviter petiolata coriacea, petiolo crasso 7–13 mm. longo; lamina oblonga vel elliptico-oblonga, interdum obovato-oblonga saepius prope medium latissima sed interdum apicem versus paullo latior, 6.5–10 cm. longa 2.5–3.8 cm. lata, apice breviter subacuminata vel abrupte acuta, apice ipso acuto, basi acuta vel interdum subrotundata, rarius longius angustata, margine integro et subrevoluto, glabra, supra in sicco fuscescens vel griseo-viridis, costa anguste impressa, nervis plus minusve manifestis sed non elevatis, venis obsoletis, subtus vix pallidior, costa gracili elevata, nervis lateralibus utroque latere 13–14 tenerrimis prominulis angulo lato abeuntibus, venis paucis obscuris vix prominulis; flores tetrameri in axillis foliorum fasciculati ca. 8, pedicellis inaequalibus vix ultra 2.5 mm. longis glabris; sepala ovato-orbicularia ca. 1 mm. longa apice latissimo minute apiculata viridescentia; corolla in alabastro globosa extus glabra 1.5 mm. alta.—Guatemala: Dept. San Marcos: Top of ridge bordering barranco of Río Tonaná, between Canjulá and La Unión Juárez, near southeast portion of Volcán de Tacaná, alt. 2,000–3,000 meters, February 22, 1940, *Julian A. Steyermark* 36381 (type in Herb. Field Mus.). Río Vega, near San Rafael and Guatemala-Mexico boundary, Volcán de Tacaná, alt. 2,500–3,000 meters, February, 1940, *Steyermark* 36285.—Dept. Quezaltenango: Along quebrada, between Finca Pireneos and Finca Soledad, lower south-facing slopes of Volcán de Santa María, between Santa María de Jesús and Calahuaché, alt. 1,300–1,400 meters, January, 1940, *Steyermark* 33500; local name Cerezo.

Among the several Guatemalan species of *Ilex*, the present one is easy of recognition because of its rather large, oblong, quite entire leaves.

Ilex panamensis Standl. Field Mus. Bot. 4: 221. 1929.—While described from Panama, this species occurs commonly in the Atlantic lowlands of Honduras and British Honduras, and has been reported from those countries. It may now be recorded from the north coast of Guatemala, and also from extreme southern Mexico: Mexico: Ojo de Agua, Balancán, Tabasco, *Matuda* 3126; a tree of 5–6 meters, the trunk 30 cm. in diameter.—Guatemala: Dept. Izabal: Mouth of Río Blanco, near Livingston, *C. L. Wilson* 414; a low tree. Seashore northeast of Livingston, *Steyermark* 39739; a shrub, in flower; leaves coriaceous, dark green above, pale green beneath; petals spreading, white. Between Milla 49.5 and Cristina, alt. 70 meters, wooded margin of prairie along railroad, *Steyermark* 38404; a shrub, in fruit; leaves coriaceous; fruit pale green.

SAPINDACEAE

Cupania belizensis Standl. Trop. Woods 16: 40. 1928.—The species appears to have a rather wide range, being common in British Honduras, besides occurring in Campeche and probably also in the State of Veracruz, Mexico. It has been reported in Guatemala from Petén, and is now known to grow also in the Department of Izabal: Near Quiriguá, hilly pine forest, alt. 75–150 meters, *Standley* 72262; a shrub or small tree, common. Between Milla 49.5 and Cristina, alt. 70 meters, margin of prairie, *Steyermark* 38423; a tree of 7.5 meters; leaves subcoriaceous, rich green above, buff-brown-green beneath. Between Milla 49.5 and ridge 6 miles from Izabal, Montaña del Mico, alt. 65–600 meters, *Steyermark* 38525; a tree of 7.5–13 meters; fruit olive-green; growing in lowland jungle.

RHAMNACEAE

Colubrina guatemalensis Standl. Field Mus. Bot. 8: 22. 1930.—The type is *Jesús Morales Ruano* 1230 from San Martín Jilotepeque, Dept. Chimaltenango, and the species was found by the same collector near Laguna de Amatitlán, Dept. Guatemala. The following recent specimens indicate a wide range inside Guatemala: Near Amatitlán, Dept. Guatemala, alt. 1,170 meters, dry, brushy slopes, an abundant, slender shrub, *Standley* 61347. Dept. Guatemala, *Ignacio Aguilar* 100. Near Sacapulas, Dept. Quiché, alt. 1,040–1,240 meters, dry, rocky hillsides, a slender shrub of 2–3 meters,

Standley 62537. Concuá Bridge over Río Motagua, Dept. Guatemala, alt. 300 meters, a small, slender shrub in thicket along river, *Standley* 59324. Dept. Zacapa, dry slopes along Río Motagua, 1 mile west of Teculután, alt. 250 meters, a shrub of 4.5 meters, the flowers yellow-green, *Steyermark* 29200. Dept. Chiquimula, base of Cerro Colorado, along Río Jocotán, near Jocotán, alt. 400 meters, lower rocky slopes, *Steyermark* 31523; a shrub. Dept. Zacapa, lower slopes of Sierra de las Minas along trail above Río Hondo, alt. 250–900 meters, *Steyermark* 29518; a small tree along steep, small quebrada in barranco, in thickets.

VITACEAE

Cissus Martiniana Woodson & Seibert, Ann. Mo. Bot. Gard. 24: 191. 1937.—Described but recently from Panama, this vine of distinctive foliage already has been reported from Costa Rica and Honduras, seven specimens from those countries being in the Herbarium of Field Museum. Its range extends as far northward as Guatemala: Dept. San Marcos: Barranco Eminencia, above San Rafael Pie de la Cuesta, alt. 2,100–2,400 meters, in wet forest, a small vine, *Standley* 68675. Slopes of barrancos tributary to and bordering Río Vega, between San Rafael at northeast portion of Volcán de Tacaná and the Guatemala-Mexico border, alt. 2,500–3,000 meters, *Steyermark* 36368; climbing on dry upper slopes around the boundary line; leaves dark, rich green and shining above, pale beneath; petiole rose-colored. Between Canjulá and La Unión Juárez, near southeast portion of Volcán de Tacaná, alt. 2,000–3,000 meters, *Steyermark* 36435; twining around tree trunks.—Dept. Zacapa: Cloud forest in ravine bordering Quebrada Alejandria, summit of Sierra de las Minas, vicinity of Finca Alejandria, alt. 2,500 meters, *Steyermark* 29835; climbing on a tree trunk.

TILIACEAE

Sloanea ampla I. M. Johnston, Journ. Arn. Arb. 19: 124. 1938.—The type was collected on Volcán de Zunil, at 1,680 meters, *Skutch* 968, and the species was found by the same collector at Finca Moca, Dept. Suchitepéquez. The Quiché name was reported as Zulín. Several recent Guatemalan collections are at hand: Finca Pireneos, below Santa María de Jesús, Dept. Quezaltenango, alt. 1,350–1,380 meters, dense, damp forest, a frequent tree of 9–15 meters, the fruit bright red within, *Standley* 68208. Near Vuelta del Tigre, below Santa María de Jesús, alt. 1,500 meters, *Standley* 68175. Dept. Quezaltenango, along Quebrada San Gerónimo, Finca

Pireneos, alt. 1,300–2,000 meters, *Steyermark* 33419; a tree of 6 meters. Dept. San Marcos, Finca El Porvenir, Potrero Matasán, Volcán de Tajumulco, alt. 1,000–1,300 meters, *Steyermark* 37636; a tree of 24 meters; leaves firmly subcoriaceous, rich grass-green above, pale grass-green beneath; fruit brown outside, brick-red within. The Spanish names are Peine de mico and Palo de peine, in allusion to the large, bur-like fruits.

MALVACEAE

Robinsonella cordata Rose & Baker, Gard. & For. 10: 244. *f. 31*. 1897; Roush, Journ. Arnold Arb. 12: 57. *f. 6*. 1931.—In the most recent account of the genus *Robinsonella* (loc. cit.), the species is recorded only from Mexico, but it extends into central Guatemala, being common along the barrancos lying north of the Volcán de Acatenango. The following new collections of the species may be recorded: Guatemala: Dept. Chimaltenango, damp barranco above Las Calderas, alt. 1,800–2,100 meters, *Standley* 59992; a tree of 6–9 meters. Dept. Sacatepéquez, edge of barranco above Dueñas, alt. 1,600–1,800 meters, *Standley*, 63133; a tree of 6 meters. Dept. Chimaltenango, Las Calderas, *J. R. Johnston*, 1594.—Mexico: Without locality, *Sessé & Mociño* 3524. The Sessé and Mociño collection was indicated as a new species of *Sida*. The tree during its brief blooming season, in December and January, is an exceptionally beautiful one on account of its profusion of bright purple flowers.

Robinsonella edentula Rose & Donn. Smith, Bot. Gaz. 37: 417. 1904.—So far as known, this tree is confined to the region of Cobán, Alta Verapaz, Guatemala, and it is not certain whether it grows wild there, or only in cultivation. Only the type collection, *Tuerckheim* 665, has been reported, but the species is represented by *Standley* 70382, from a beautiful tree cultivated in the garden of Mrs. Hempstead at Cobán. Here the tree is called Chaqueta de novia. The flowers are very abundant, bell-shaped, and pendent. Their petals are whitish, with dark purple veins. The tree is said to grow wild in the vicinity of Cobán, and probably does, although not much reliance can be placed upon such reports.

CISTACEAE

Helianthemum chihuahuense Wats. Proc. Amer. Acad. 23: 268. 1888.—The species was based on material from the state of Chihuahua, Mexico, and has been reported also from the state of Hidalgo. In Guatemala several collections have been made:

Dept. Huehuetenango, dry, rocky hillside, Sierra de los Cuchumatanes, above Chiantla, alt. 1,950–2,550 meters, *Standley* 65609. Dept. Chimaltenango, dry oak and pine forest, near San Martín Jilotepeque, alt. 1,800 meters, *Standley* 64392. Dept. Quiché, open pine and oak forest, south of Chichicastenango, alt. 1,850–2,100 meters, *Standley* 62364. Dept. Jalapa, pine-covered slopes on hills between Güisiltepeque and Potrero Carrillo, alt. 1,800 meters, *Steyermark* 33026; on open, grassy, *Pteridium*-covered ridge; flowers yellow. In Guatemala this species is rare, in contrast with *H. glomeratum* Lag., which is extremely abundant throughout the greater part of the upland pine and oak forests.

There may be listed here two other collections of this species from Mexico, *Sessé & Mociño* 2256 and 2259. The first of these is "*Cistus ciliaris* Moc. in sched.," listed by Grosser (Pflanzenreich IV. 193: 47. 1903). The second was indicated by its collectors as a new species, under the name *maculatus*, in a genus other than *Helianthemum*.

VIOLACEAE

Orthion Standl. & Steyerm., gen. nov.—Arbores elatae glabrae; stipulae breves lataeque caducae; folia alterna vel ad apices ramorum congesta et subverticillata chartacea magna vel modica, anguste lanceolata vel oblanceolata usque oblongo-lanceolata, breviter vel brevissime petiolata, acuta vel acuminata, basin acutam vel anguste rotundatam versus angustata, adpresso-serrata vel undulata, nervis venisque prominentibus; inflorescentiae axillares, plerumque ex axillis supremis nascentes et false subumbellatae longipedunculatae, floribus in cymas laxe multifloras multiramosas corymbiformes e basi saepe multiradiatas dispositis pedicellatis vel sessilibus parvis albis, bracteis minutis; sepala parva parum inaequalia rotundata vel late ovalia apice rotundata usque acuta, basi haud producta; petalum inferum ceteris paullo majus extus puberulum, haud unguiculatum, basi interdum paullo dilatatum, apice retusum; stamina glabra, filamentis complanatis latis in tubum brevem coalitis, antheris ovalibus ecalcaratis, connectiva lata apice in appendicem brevem rotundatam protracta; stylus crassiusculus subsigmoideo-curvatus; capsula majuscula obtuse trigona elastice trivalvis 1-locularis crasse coriacea vel fere lignosa, apice obtusa vel rotundata; placentae 3 parietales, ovulis ut videtur numerosis, funiculis brevibus; semina abortu saepius ut videtur 6, interdum 3, majuscula subglobosa apice late rotundata laevia.

Type species, *Orthion subsessile* (Standl.) Standl. & Steyerm.

When the two Central American trees here referred to a new genus were first described as species of *Hybanthus*, this disposition of them was made with considerable reservation, and the receipt of further although not ample collections of one of the species has strengthened the belief that the species should not be referred to that genus. It is difficult to indicate floral details by which they differ generically from all the multiform species of *Hybanthus*, but in general appearance they are quite unlike any members of that genus, as generally treated, even some *Hybanthus* species that become fair-sized shrubs. The species of *Orthion* are not shrubs but tall trees, one of them attaining a height of 18 meters and a trunk diameter of 45 cm. The large, many-flowered, long-pedunculate inflorescences are quite unlike those of any species of *Hybanthus*, and in the latter genus the lowest and largest petal is definitely clawed, the corresponding petal in *Orthion* being sessile. It may be added that the leaves of the two species of *Orthion* are in no way similar to those of any member of the genus *Hybanthus*.

So far as now known, the genus consists of two species, restricted to the wet, lowland forests of northern Guatemala and of British Honduras.

Orthion subsessile (Standl.) Steyerm. & Standl., comb. nov. *Hybanthus subsessilis* Standl. Carnegie Inst. Wash. Publ. 461: 72. 1935.—The following collections are known: Guatemala: Jocolo, Río Perdonales, shrubby jungle, Dept. Izabal, a tree of 6 meters, *Harry Johnson* 1071, type. Dept. Izabal, between Milla 49.5 and ridge 6 miles from Izabal, Montaña del Mico, alt. 65–600 meters, April, 1940, *Steyermark* 38515; a tree of 6–9 meters; leaves stiffly chartaceous, dull green above, paler, dull green beneath; fruit obtuse, 3-sided. Dept. Izabal, jungle bordering Quebrada Roseúl, lower slopes of eastern part of Cerro Santa Cruz, northeast of San Felipe, alt. 50–150 meters, *Steyermark* 39640; a tree. Dept. Izabal, along trail beginning from mile 33.23 between Dartmouth and Morales towards Lago de Izabal, Montaña del Mico, alt. 35–150 meters, by a swamp, *Steyermark* 39094; a tree of 6 meters.—British Honduras: Río Grande, in forest shade, rare, March, 1933, *Schipp* 1132. Without locality, *J. H. N. Smith* 7.

Orthion malpighiifolium (Standl.) Standl. & Steyerm., comb. nov. *Hybanthus malpighiifolius* Standl. Carnegie Inst. Wash. Publ. 461: 73. 1935.—Known only from the type: British Honduras: In forest, Camp 32, British Honduras-Guatemala boundary, alt. 630 meters, March, 1934, *Schipp* 1278.

FLACOURTIACEAE

Bartholomaea Standl. & Steyerm., gen. nov.—Arbores, ramulis gracilibus teretibus plus minusve flexuosis; stipulae minutae subulatae deciduae; folia alterna parva membranacea vel subcoriacea breviter petiolata 3–5-nervia sparse pellucido-punctata, crenato-serrata vel undulato-serrata, pubescentia vel glabrata, pilis simplicibus; flores plerumque tetrameri, interdum trimeri dioeci spicati, spicis simplicibus axillaribus solitariis dense vel sparse multifloris, floribus singulis minute basi bracteatis; sepala floris masculi 4 libera minuta suborbicularia; petala 4 sepalis similibus sed duplo vel triplo longiora; stamina vulgo 8 vel interdum ut videtur plura disco inconspicuo minuto irregulariter inserta, filamentis filiformibus elongatis glabris; antherae minutae didymae; flores feminei bene evoluti non visi, sepalis sub fructu persistentibus vulgo 4 minutis spathulato-rotundatis; stylus nullus, stigmatibus 4 vel 3 brevissimis subulatis; capsula depresso-globosa parva glabra ad medium 3–4-valvata, valvis post dehiscentiam patulis vel recurvis apice rotundatis extus dense minute transverso-rugulosis intus glabris; semina 4 vel 3 medio valvulae versus apicem inserta, subglobosa, pilis longissimis mollibus dense obtecta.

Type species, *Bartholomaea mollis* Standl. & Steyerm.

This group of Flacourtiaceae, consisting of two well marked species, is confined, so far as now known, to the coastal regions of northern Guatemala and of British Honduras. One of the species was described rather recently as a *Lunania*, principally, it seems, on account of the general appearance of its inflorescence, although the plant evidently is not closely related to that genus. The species of *Bartholomaea* do bear much resemblance to some species of the African genus *Trimeria*, but it is not believed that the relationship is very close.

The most conspicuous character of *Bartholomaea* is found in the long-pilose seeds, which seem to be unique in the family. In this connection may be recalled the genus *Gossypiospermum*, referred by some authors to *Casearia*, but in that the seeds are merely short-pubescent, rather than long-pilose.

The genus is dedicated to Bartolomé de las Casas, Protector of the Indians, one of the most admirable heroes of the Conquest. He it was who first introduced civilization to the Kekchí Indians of Verapaz, and in his voyages he must have passed more than once along the still densely forested river banks of the Río Dulce where one of the species grows.

Bartholomaea mollis Standl. & Steyerm., sp. nov.—Arbor vel arbuscula, ramulis gracilibus, novellis subferrugineis dense breviterque patulo-pilosulis, internodiis brevibus; folia membranacea breviter petiolata, petiolo 4–5 mm. longo dense pilosulo; lamina elliptico-oblonga usque ovata 4–8 cm. longa 2–3.7 cm. lata acuta vel acuminata, apice ipso subobtuso, basi plus minusve asymmetrica anguste rotundata usque acuta, remote undulato-serrata vel subintegra, remote grosseque pellucido-punctata, supra minutissime puberula, nervis venisque non elevatis, subtus paullo pallidior, praesertim ad nervos venasque pilis longiusculis patulis mollibus pilosa, e basi trinervia, nervis tenerrimis pallidis prominentibus, lateralibus longe ad tertiam superiorem laminae protractis, costa supra medium utroque latere nervos 3 emittente, venis plerumque transversis et subparallelis remotis vix prominulis; spicae masculae fere sessiles gracillimae 2.5–7 cm. longae multiflorae, rhachi pilis albidis brevibus dense pilosula, floribus arcte sessilibus, bracteis minutis sepalis aequilongis; sepala suborbicularia 0.6 mm. longa extus minutissime pilosula apice rotundata; petala ovalia glabra apice rotundata ca. 1.2 mm. longa; stamina petalis aequilonga vel paullulo longiora; capsulae valvulae ca. 2.5 mm. longae et 2 mm. latae coriaceae; semina ca. 1 mm. longa dense pilis albidis 3–4 mm. longis obtecta.—Guatemala: Dept. Izabal, Río Dulce, between Livingston and 6 miles up the river, on north side (right-hand side going up river), at sea level, April 14, 1940, *Julian A. Steyermark* 39452 (type in Herb. Field Mus.; fruiting specimen). Bank of Río Dulce, March 27, 1939, *C. L. Wilson* 382.

Evidently this and the following species are congeneric, and much alike in most of their characters. The leaves of *B. mollis* are membranaceous, dull, and abundantly pubescent; those of *B. sessiliflora* coriaceous, lustrous, and glabrous. Other less conspicuous characters are probably of equal or greater importance.

Bartholomaea sessiliflora (Standl.) Standl. & Steyerm., comb. nov. *Lunania sessiliflora* Standl. Carnegie Inst. Wash. Publ. 461: 74. 1935.—Of this but two collections are known: British Honduras: Jacinto Hills, alt. 120 meters, a tree of 6 meters, November, 1933, *Schipp* S-606, type. West of Gales Point, a small tree on summit of limestone hill, Belize District, February, 1931, *H. H. Bartlett* 11347.

Casearia elegans Standl. in Yuncker, Bot. Ser. Field Mus. 9: 311. 1940.—Described in 1940 from the region of La Ceiba, on the Atlantic coast of Honduras, this shrub already has been found in Guatemala: Dept. Izabal, south-facing lower ridges of Cerro San

Gil, opposite Cayuga, 30–500 meters, *Steyermark* 39501; a shrub; leaves firmly membranaceous, rich green above, pale grass-green beneath; segments of the flower spreading, pale green; filaments erect, creamy white.

Hasseltia guatemalensis Warb. in Engl. & Prantl, Pflanzenfam. 3, Abt. 6a: 32. *f. 12, D, E.* 1893.—Apparently no formal description of the species has been published, it being merely mentioned casually—and illustrated—in the place cited. It is a perfectly valid and well marked member of the genus, distinguished by its usually entire leaves and the glabrous, rather than tomentose, outer surface of the sepals. What is presumably the type, in the Berlin Herbarium, *Bernoulli* 2920, from "Sta. María," Guatemala, is represented in the Herbarium of Field Museum by Negative 13648. There are various places in Guatemala with the name Santa María, but it seems likely that in this instance there is meant either the Volcán de Santa María or Santa María de Jesús, in the Department of Quezaltenango. The following specimens of the tree are at hand: Guatemala: Dept. Suchitepéquez, Finca Moca, in forest on ridge, alt. 1,320 meters, *Skutch* 2106; a tree to 21 meters in height, the trunk 30 cm. in diameter, the bark slightly rough but close, gray; flowers white. Dept. Quezaltenango, San Juan Patzulín, lower slopes of Volcán de Santa María, alt. 1,500 meters, *Steyermark* 33627; local name Canela de montaña; a tree of 12 meters, the leaves firmly chartaceous, grass-green above on young leaves, dark on older ones, grass-green beneath; petals white, the filaments buff. Dept. Quezaltenango, Finca Pireneos, lower slopes of Volcán de Santa María, alt. 1,300–1,500 meters, in cafetal, *Steyermark* 33253; a tree of 10.5 meters.—Mexico: Buena Vista, Escuintla, Chiapas, *Matuda* 1881. Siltepec, Chiapas, *Matuda* 385.

Lunania mexicana Brandegee, Univ. Calif. Publ. Bot. 6: 56. 1914.—A single species of *Lunania* has been collected in Mexico, described from Chiapas and reported also from Veracruz. Recent exploration shows that it grows also in the mountains of Guatemala, as far east as the Department of Suchitepéquez: Dept. Suchitepéquez: Finca Moca, open woods, alt. 960 meters, *Skutch* 2070; a tree of 9 meters, the flowers green. Southwestern slopes of Volcán de Zunil, vicinity of Finca Montecristo, southeast of Santa María de Jesús, alt. 1,200–1,300 meters, *Steyermark* 35251; a shrub of 3–4.5 meters.—Dept. Quezaltenango: Finca Pireneos, below Santa María de Jesús, alt. 1,350–1,380 meters, damp, dense forest, *Standley* 68221; a shrub. Lower slopes of Volcán de Santa María, between

Finca Pireneos and Los Positos, alt. 1,300–1,500 meters, *Steyermark* 33740; a tree of 9 meters; leaves rich, bright green and shining above, rich green beneath; sepals brownish brick-colored.—Dept. San Marcos: Río Ixpal, below Rodeo, alt. 750 meters, wet thicket, *Standley* 68730; a shrub.

THYMELAEACEAE

Daphnopsis ficina Standl. & Steyerm., sp. nov.—Frutex 2-metralis ut videtur dense ramosa, ramulis crassiusculis fusco-ferrugineis, novellis ferrugineis primo sparse denseve strigosis, internodiis brevibus; folia parva breviter petiolata subcoriacea, petiolo 3–4 mm. longo sparse adpresso-piloso; lamina elliptica vel oblongo-elliptica, interdum oblongo-lanceolata, plerumque 3–5 cm. longa, 1–2.3 cm. lata, obtusa vel saepius apicem obtusum versus aliquanto angustata, basi acuta vel basin versus sensim angustata, interdum abrupte contracta et breviter in petiolum decurrens, supra pallide viridis glabra, nervis venisque prominulis et laxe reticulatis, sublucida, subtus pallidior, primo pilis sparsis adpressis conspersa, in statu adulto glabra, costa tenera prominente, nervis lateralibus utroque latere ca. 8 solemniter inaequalibus et irregularibus prominentibus prope marginem irregulariter junctis, venis paucis prominulis reticulatis; inflorescentiae femineae laterales ca. 6-florae, pedunculis simplicibus 1–2 cm. longis sparse vel dense strigosis vel sericeis glabrescentibus, floribus apice umbellatis, pedicellis crassiusculis vel gracilibus usque 5 mm. longis; perianthii tubus urceolatus fere 3 mm. longus extus dense sericeus, lobis 4 patulis suborbicularibus ca. 1.3 mm. longis apice rotundatis intus minute puberulis vel fere glabris; fructus ut videtur subglobosus fere glaber ca. 1 cm. longus vel paullo brevior.—Guatemala: Dept. Guatemala, in forests of Manzanote (*Olmediella Betschleriana*), La Cienaguilla, San José Pinula, alt. 1,600 meters, January, 1932, *Jorge García Salas* 1442 (type in Herb. Field Mus.).

Local name Chililllo. The relationship is with *Daphnopsis Bonplandiana* (Kunth) Standl., which, as now interpreted, is a fairly common shrub of the Guatemalan mountains. In that the leaves are normally much larger and relatively narrower, and the peduncles usually much longer. The leaves of *D. ficina* suggest those of some species of *Ficus*, such as *F. padifolia* HBK., a fact to which the specific name alludes.

Daphnopsis retifera Standl. & Steyerm., sp. nov.—Frutex 3-metralis, ramulis crassiusculis subteretibus brunneis vel fusco-brunneis dense pilis ochraceis subadpressis vel fere patentibus longius-

culis pilosis, internodiis brevibus; folia modica breviter petiolata subcoriacea, petiolo crasso 5–8 mm. longo dense adpresso-piloso; lamina anguste elliptico-oblonga vel lanceolato-oblonga, interdum oblanceolato-oblonga, 7–11 cm. longa 2–4 cm. lata apicem obtusum versus paullo angustata, basin angustam versus longe sensimque attenuata, supra in sicco lucida glabra vel tantum ad costam sparse breviterque adpresso-pilosa, costa subimpressa, nervis obsoletis, subtus paullo pallidior ubique sat dense pilis subpatulis mollibus pilosa, costa gracili elevata, nervis lateralibus utroque latere ca. 8 obliquis angulo ca. semirecto adscendentibus gracilibus prominentibus, venulis insigniter prominentibus et arcte reticulatis; inflorescentiae (perfectae non visae) axillares vel laterales, floribus arcte sessilibus capitatis, pedunculis simplicibus subrecurvis ca. 3 cm. longis dense adpresso-pilosis.—Guatemala: Dept. Jutiapa, dry plateau in chaparral between railroad station of Mita and town of Asunción Mita, alt. 650 meters, November 13, 1939, *Julian A. Steyermark* 31758 (type in Herb. Field Mus.).

Although the single available specimen is imperfect, consisting of leafy branches with peduncles from which the flowers have fallen, it is clear that it represents a quite distinct and undescribed species. The leaves are distinctive, almost completely glabrous and lustrous on the upper surface, densely velvety-pilose beneath, and with very conspicuous and closely reticulate venation.

Daphnopsis Selerorum Gilg, Verh. Bot. Ver. Brandenb. 58: 153. 1917.—The type is *Seler* 2866 from forests of Yalambohoch, Distr. Nentón, Dept. Huehuetenango, Guatemala. Although we have seen no authentic representation of the species, the following specimens agree perfectly with Gilg's detailed description: Guatemala: Dept. Quezaltenango: Lower south slopes of Volcán de Santa María, between Santa María de Jesús and Calahuaché, alt. 1,300–1,500 meters, *Steyermark* 33642; a shrub of 3 meters; fruit rich green, shining, ovoid; leaves firmly membranaceous, rich, dark green above, grass-green beneath. Between Finca Pireneos and Finca Soledad, lower slopes of Volcán de Santa María, alt. 1,300–1,400 meters, forested slopes near the summit, *Steyermark* 33526; a tree of 7.5 meters; berries black, shining, at first green. Along Quebrada San Gerónimo, Finca Pireneos, alt. 1,300–1,400 meters, *Steyermark* 33428; called Palo de chonta; a tree of 6 meters; berries ovoid, acute at the apex. Finca Pireneos, alt. 1,350 meters, damp, dense forest, *Standley* 68337. Near Calahuaché, alt. 1,020 meters, a shrub in damp forest, *Standley* 67129.

COMBRETACEAE

Bucida macrostachya Standl. Field Mus. Bot. 4: 240. 1929. —The type was collected at El Rancho, Dept. Progreso, Guatemala in 1907, *Kellerman* 7744. The species has been re-collected recently in the same country: Dept. Zacapa, rocky slopes between San Pablo and Pepezca, alt. 200–250 meters, October, 1939, *Steyermark* 29358. A tree of 4.5 meters; flowers white.

MYRTACEAE

Psidium rotundifolium Standl. Field Mus. Bot. 8: 318. 1931. —Only the type specimen, obtained at All Pines, British Honduras, has been known previously. One Guatemalan collection seems to represent the species: Dept. Jutiapa, grassy, open places along railroad between Agua Blanca and Amatillo, alt. 950–990 meters, *Steyermark* 30374. A shrub 30 cm. high.

MELASTOMACEAE

Blakea bella Standl. Bot. Ser. Field Mus. 22: 94. 1940.—Additional collections of this handsome tree may be recorded: Guatemala: Dept. Izabal, Río Dulce, between Livingston and 6 miles up the river, on north side (right-hand side going up river), at sea level, April, 1914, *Steyermark* 39450; a tree; leaves subcoriaceous, mottled rich green with darker green above, pale green beneath and with yellow, stellate scales; flowers very sweet-scented, the petals spreading, fleshy, rose-pink with white margins; anthers all on one side, golden yellow; style white. Along trail beginning from mile 33.23 between Dartmouth and Morales towards Lago de Izabal, Montaña del Mico, alt. 35–150 meters, *Steyermark* 39082; a tree of 9–15 meters; leaves subcoriaceous, rich grass-green above, pale green beneath; foliaceous outer bracts spreading; calyx lobes ascending. Base of waterfall, jungle between Escobas and waterfall, across the bay from Puerto Barrios, alt. 20–50 meters, *Steyermark* 39852; calyx tube in fruit deep rose-red.

Blakea Purpusii Brandeg. Univ. Calif. Publ. Bot. 6: 58. 1914.—*Blakea Purpusii* is apparently the northernmost representative of its genus, which is only moderately well represented in Central America. The type was collected by Purpus on Cerro del Boquerón, Chiapas. The species extends into the Occidente of Guatemala, where it is rather common. Mexico: Mount Tacaná, Chiapas, alt. 2,000–4,035 meters, *Matuda* 2328.—Guatemala: Dept. Quezaltenango: Slopes and ridges between Quebrada Chicharro and Montaña

Chicharro, southeast slopes of Volcán de Santa María, alt. 1,300–1,400 meters, *Steyermark* 34347; leaves firmly subcoriaceous, rich, bright green above, pale green and rugose beneath.—Dept. San Marcos: Barranco Eminencia and vicinity, wet forest, alt. 2,100–2,700 meters, *Standley* 68466, 68543, 68670; a tree about 6 meters tall, common. Between Canjulá and La Unión Juárez, near southeast portion of Volcán de Tacaná, alt. 2,000–3,000 meters, along bed of stream tributary to Río Suchiate, *Steyermark* 36454; leaves dark, rich green and shining above, gray-green beneath, brown on the nerves; petals waxy, erect, olive-green. Between town of Tajumulco and Tecutla, northwestern slopes of Volcán de Tajumulco, alt. 1,800–2,500 meters, *Steyermark* 36793; a tree of 9 meters; petals green. Slopes of barrancos tributary to and bordering Río Vega, between San Rafael and Guatemala-Mexico boundary, Volcán de Tacaná, alt. 2,500–3,000 meters, *Steyermark* 36370; a tree to 18 meters in height.

Mouriria exilis Gleason, Carnegie Inst. Wash. Publ. 522: 370. 1940.—This recently published species was described from British Honduras, seven collections being cited. It has been found also in nearby Guatemala, and two additional British Honduras collections may be reported: British Honduras: In jungle, Mullins River road, alt. 15 meters, *Schipp* 70; a tree of 12 meters, the trunk 22 cm. in diameter; flowers white, sweet-scented, rose-colored in bud. Stann Creek Valley, frequent in pine-hardwood transition, *J. B. Kinloch* 207; a small tree, 6 meters high, the trunk 10 cm. in diameter.—Guatemala: Jocolo, Alta Verapaz, *Harry Johnson* in 1921. Tree on bank of Río Dulce, Dept. Izabal, *C. L. Wilson* 407. Dept. Izabal, between Livingston and 6 miles up river, on north side (right-hand side going up river), at sea level, *Steyermark* 39435; a tree; leaves subcoriaceous, dark green above, dull, paler green beneath; calyx tube salmon-buff, the lobes spreading, buff-yellowish; petals white, with pink tips, ovate; filaments white, the anthers golden yellow. Dept. Izabal, seashore around Punta Palma, across the bay from Puerto Barrios, at sea level, *Steyermark* 39842; petals white with deep orchid-rose midrib; a small tree. Dept. Izabal, between Milla 49.5 and ridge 6 miles from Izabal, Montaña del Mico, alt. 65–600 meters, *Steyermark* 38487; a tree of 9 meters.

Mouriria Steyermarkii Standl., sp. nov.—Arbor praeter flores omnino glabra, ramis gracilibus sed rigidis teretibus rimosis brunnescentibus vel lutescentibus, internodiis elongatis; folia arcte sessilia magna in sicco coriacea oblongo-ovata 10.5–17 cm. longa 5–7.5 cm.

lata acuminata, basi rotundata et breviter cordata, amplexicaulia, supra in sicco olivacea sublucida, utrinque dense tuberculoso-pustulata, costa supra non elevata, nervis prominulis, subtus multo pallidiora, costa prominente, nervis obscuris; flores cymosi terminales, cymis sessilibus paucifloris 2 cm. longis, ramis pedicellisque minute puberulis, pedicellis ad 5 mm. longis, bracteis parvis latissime ovatis acutis puberulis; calyx 7 mm. longus campanulatus basi acutiusculus minute puberulus, limbo breviter lobato, lobis late rotundatis; petala in alabastro 6 mm. longa apice obtusa vel rotundata, extus minutissime puberula vel fere glabra.—Guatemala: Dept. Izabal, Río Dulce, between Livingston and 6 miles up the river, on north side (right-hand side going up river), at sea level, April 14, 1940, *Julian A. Steyermark* 39446 (type in Herb. Field Mus.).

"Petals whitish. Buds greenish white in lower half, dull rose in upper. Pedicels rose-red. Leaves subcoriaceous, dark green above, pale green beneath." From other large-leaved *Mouriria* species of the general region this is distinguishable at once by its rather deeply cordate, clasping leaves and terminal flowers.

CLETHRACEAE

Clethra Johnstonii Standl. & Steyerm., sp. nov.—Ramuli crassi fusci teretes, novellis obtuse angulatis densiuscule pubescentibus, internodiis abbreviatis; folia modica breviter petiolata firme membranacea vel subcoriacea, petiolo 1–1.5 cm. longo crassiusculo puberulo vel glabrato; lamina oblongo-oblanceolata vel anguste oblanceolata 7–11.5 cm. longa 2–4 cm. lata, apice rotundata vel late obtusa et apiculata, basin versus longe sensimque cuneato-attenuata, supra in sicco olivacea glabra vel glabrata, costa nervisque subimpressis, subtus viridis et fere concolor, sparse et minutissime stellato-puberula, costa gracili elevata, nervis lateralibus utroque latere ca. 17 obliquis fere rectis angulo semirecto adscendentibus, venis prominulis laxe reticulatis; racemi plures ad apicem rami fasciculati sessiles vel breviter pedunculati usque 17.5 cm. longi, laxe multiflori, rhachi gracili stellato-pilosula, pedicellis 5–8 mm. longis patulis vel subrecurvis stellato-tomentulosis; sepala ca. 3 mm. longa extus dense minuteque stellato-tomentella lanceolato-ovata acuta vel subacuminata ciliata; stylus crassiusculus glaber sepalis paullo longior; ovarium dense stellato-tomentosum.—Guatemala: Dept. Guatemala, Volcán de Pacaya, above Las Calderas, May 20, 1938, *J. R. Johnston* 1255 (type in Herb. Field Mus.). Dept. Guatemala, in 1940, *Ignacio Aquilar*.

The species is an unusually well marked one for the genus, distinguished by the combination of very obtuse leaves, green and almost glabrous on the under surface, and long-pedicellate flowers.

Clethra Pachecoana Standl. & Steyerm., sp. nov.—Arbor 6–15-metralis et ultra dense ramosa, ramulis crassis ferrugineis vel fuscis dense foliatis, internodiis abbreviatis, novellis dense sordideque ferrugineo-tomentellis; folia parva petiolata coriacea, petiolo crassiusculo vulgo 6–12 mm. longo sordide tomentuloso; lamina oblanceolato-oblonga vel obovato-oblonga vulgo 4.5–7 cm. longa et 1.2–3 cm. lata, apice obtusissima vel subrotundata et apiculata, interdum subacuta, basin versus angustata, ima basi subacuta usque truncata, margine basali utroque latere abrupte ad paginam inferiorem laminae recurvato, margine laminae saepius integro vel obscure undulato, sed in laminis ramulorum sterilium saepe argute serrato, lamina supra glabra, in sicco fusco-brunnescente, costa nervisque subimpressis, subtus paullo pallidior ut videtur viridis sed re vera tomento minuto fere microscopico et arctissime adpresso induta, costa nervisque glabratis brunneis, costa gracili prominente, nervis lateralibus utroque latere ca. 10 teneris prominulis fere rectis angulo semirecto vel paullo latiore adscendentibus; racemi pauci vel numerosi ad apicem rami fasciculati vel interdum breviter paniculati usque 10 cm. longi ca. 8 mm. lati sessiles vel breviter pedunculati densissime multiflori, rhachi crassiuscula dense minute brunneo-stellato-tomentella, pedicellis crassis vix ultra 1.5 mm. longis saepius recurvis; sepala 2.5 mm. longa extus minute brunneo-tomentella obtusa oblongo-ovata; petala alba sepalis paullo longiora obovata ciliata; stylus crassiusculus glaber; capsula depresso-globosa 3–3.5 mm. lata minute stellato-tomentulosa.—Guatemala: Dept. Sacatepéquez: Damp forest, slopes of Volcán de Agua, above Santa María de Jesús, alt. 2,250–3,000 meters, February 11, 1939, *Paul C. Standley* 65123 (type in Herb. Field Mus.).—Dept. Guatemala: Open forest, Volcán de Pacaya, above Las Calderas, alt. 2,250 meters, November, 1938, *Standley* 58333.—Dept. Chimaltenango: Region of Las Calderas, wet forest, alt. 1,800–2,100 meters, November, 1938, *Standley* 57807, 57781. Slopes of Volcán de Acatenango, above Las Calderas, alt. 2,400–2,700 meters, in dense, wet *Chiranthodendron* forest, January, 1939, *Standley* 61823; local name Escobo. Chichavac, alt. 2,550 meters, a large forest tree, common, November, 1933, *Skutch* 701.

Clethra Pachecoana is not closely related to any other described species of Mexico or Central America. The principal distinguishing

characters are the small, almost glabrous, coriaceous leaves, and the small, short-pedicellate flowers. The leaves of vigorous sterile branches are closely and sharply serrate, being thus very unlike the quite entire ones of flowering branches. Similar variation in leaf margins is not infrequent, apparently, in other members of the genus.

This handsome tree is named for Don Mariano Pacheco Herrarte, of the Dirección General de Agricultura of Guatemala, whose beautiful and extensive live collections of tropical plants are a source of pleasure each year to thousands of visitors.

Clethra Skutchii Standl. & Steyerm., sp. nov.—Arbor 10–22-metralis, trunco usque 32 cm. diam., ramulis crassis plus minusve nodosis fuscis, junioribus brunneis pilis brevibus patentibus hispidulis, internodiis valde abbreviatis; folia modica petiolata firme membranacea vel subcoriacea, petiolo gracili 1.2–2 cm. longo puberulo vel fere glabro; lamina oblanceolato-oblonga usque oblongo-obovata 8–13 cm. longa 3.5–7 cm. lata, apice rotundata usque subacuta, saepe abrupte apicata, basin versus vulgo plus minusve angustata, basi ipsa cuneata vel rarius late obtusa, supra in sicco fusco-brunnescens fere glabra, saepe minute puncticulato-asperata, costa nervisque subimpressis vel fere planis, subtus cinerea fere ubique tomento minutissimo arctissime adpresso obtecta, costa nervisque glabratis brunnescentibus, costa tenera elevata, nervis lateralibus utroque latere ca. 14 teneris prominentibus fere rectis angulo semirecto vel saepius latiore adscendentibus, venis fere obsoletis, margine integro vel inconspicue undulato; racemi ad apicem ramuli fasciculati 3–6 sessiles vel breviter pedunculati usque 13 cm. longi et ca. 1 cm. lati dense multiflori, rhachi minute stellato-pubescente, pedicellis crassis vix ad 2 mm. longis; sepala ca. 2.5 mm. longa ovato-oblonga extus minute stellato-tomentulosa acutiuscula subrecurva; petala alba obovata sepalis paullo longiora ciliata; stylus glaber crassus sepalis paullo longior.—Guatemala: Dept. Quezaltenango: In forest, Palmar, alt. 1,350 meters, October 14, 1934, *Alexander F. Skutch* 1453 (type in Herb. Field Mus.); a tall, narrow-crowned tree; flowers fragrant. Volcán de Santa María, between Santa María de Jesús, Las Mojadas, and summit of volcano, alt. 1,500–3,000 meters, January, 1940, *Steyermark* 33934.

The Skutch collection was distributed as *Clethra macrophylla* Mart. & Gal. That is a Mexican species which differs in its relatively lax pubescence of much larger, soft hairs. In *C. Skutchii* the indument of the lower leaf surface is closely appressed and almost lepidote in appearance.

PYROLACEAE

Pyrola angustifolia (Alef.) Hemsl. Biol. Centr. Amer. Bot. 2: 283. 1881. *Thelaia angustifolia* Alef. Linnaea 28: 52. 1856. *P. Liebmannii* Lange, Vid. Medd. 1867: 113. 1868.—Described from Mount Orizaba, Mexico, the plant seems to be rare, for it is known from but few specimens, collected in the states of Veracruz, Puebla, and Oaxaca. Its range is now known to extend to western Guatemala: Dept. Quezaltenango, shrubby pine slopes near the summit of Volcán de Zunil, alt. 3,800 meters, January, 1940, *Steyermark* 34828. Stems purplish; leaves firmly membranaceous, dull, dark green above, paler beneath.

Pyrola secunda L. Sp. Pl. 396. 1753. *Actinocyclus secundus* var. *elatior* Lange, Vid. Medd. 1867: 115. 1868. *Ramischia elatior* Rydb. N. Amer. Fl. 29: 29. 1914. *R. secunda* var. *elatior* Andres, Repert. Sp. Nov. 19: 217. 1923.—The var. *elatior* seems to be separable by no definite character, unless geographic, from the ordinary, widespread forms of the species as it is distributed elsewhere in North America. *Ramischia elatior* was reported by Rydberg only from the region of Mount Orizaba, Mexico, and *R. secunda* was not recorded by him south of the Mexican border. The following collections show that *Pyrola secunda* has a wider range in Mexico, and extends also into northern Central America: Mexico: Nuevo León, Cerro Potosí, east face of peak, on mossy side of narrow canyon, under dense shade of *Abies*, alt. 3,000 meters, July, 1938, *Richard A. Schneider* 1042. In canyon, below Las Canoas, Cerro Potosí, abundant on wet, moss-covered banks, July, 1935, *C. H. Mueller* 2218. Las Cruces, Distrito de Temascaltepec, Mexico, alt. 3,350 meters, in *Abies* forest, September, 1932, *Geo. B. Hinton* 1716.—Guatemala: Volcán de Agua, July, 1937, *J. R. Johnston* 894. Dept. Quezaltenango, Volcán de Zunil, alt. 2,500–3,800 meters, moist, steep banks at base of cliff, January, 1940, *Steyermark* 34775. Dept. Quezaltenango, uppermost ridge to summit of Volcán de Zunil, alt. 3,000–3,800 meters, dry pine woods near the summit, *Steyermark* 34853.

ERICACEAE

Arctostaphylos cratericola Donn. Smith, Bot. Gaz. 55: 437. 1913. *A. pungens* HBK. var. *cratericola* Donn. Smith, op. cit. 15: 13. 1891.—Captain Smith cited this probably endemic Guatemalan species only from the crater of the Volcán de Agua, where he obtained the type. It has been collected there also by Kellerman and by Dr. J. R. Johnston, but it occurs also on some of the other high mountains

of the country: Volcán de Acatenango, alt. 2,400 meters, *Kellerman* 6606. Dept. Huehuetenango, Sierra de los Cuchumatanes, alt. 3,270 meters, September 14, 1934, *Skutch* 1231; a creeping shrub, covering rocks with a dense mat; flowers white; berries bright red, tasteless; unseasonal bloom, most of the plants now in fruit. Dept. Quezaltenango, summit of Volcán de Zunil among rocks and grasses, alt. 3,800 meters, *Steyermark* 34832; local name given as Abril; leaves dark grass- or rich green above, pale green beneath; stems green to coral-red in the upper part; corolla urceolate, creamy white, rose-red at the tip.

Vaccinium leucanthum Schlecht. Linnaea 8: 524. 1833.—In Mexico the species ranges rather widely, although apparently it is seldom collected. It has been found recently in Central America, the determination of the collection having been made by Dr. W. H. Camp: Guatemala: Mountains southwest of Malacatancito, Dept. Huehuetenango, pine and oak forest, alt. 1,800–2,400 meters, January, 1939, in flower, *Standley* 62612. A shrub 1–1.5 meters high, with white flowers. The shrub was abundant in the locality at which it was found, but was noted nowhere else, in spite of the general uniformity of the region in which it was collected.

THEOPHRASTACEAE

Jacquinia paludicola Standl. Field Mus. Bot. 11: 138. 1932.—Several collections are known from British Honduras, whence the species was described. Several collections, evidently conspecific, attest its extension to Guatemala: Dept. Izabal: Between Escobas and Montaña Escobas, across the bay from Puerto Barrios, at or near sea level, *Steyermark* 39293, 39295; a shrub or tree; leaves chartaceous or coriaceous, rich green above, pale silvery beneath. Between Bananera and La Presa in Montaña del Mico, alt. 40–300 meters, *Steyermark* 38118; a shrub of 3–4.5 meters. Jungle bordering Quebrada Roseúl, lower slopes of eastern part of Cerro Santa Cruz, northeast of San Felipe, alt. 50–150 meters, *Steyermark* 39641; a shrub.

EBENACEAE

Diospyros yucatanensis Lundell, Carnegie Inst. Wash. Publ. 478: 217. 1937.—When published, a single collection was cited for the species, *Lundell* 3237 from Lago de Petén, near San Andrés, Petén. The following collections now available indicate that the range of the tree is rather wide: Mexico: Tabasco: Tenosique, in advanced forest, *Matuda* 3401; a tree of 5 meters. San Isidro,

Balancán, in virgin forest, *Matuda* 3378; a tree of 15 meters, the trunk 35 cm. in diameter (determined, like the preceding collection, by Lundell).—Guatemala: Dept. Baja Verapaz: San Agustín, Sierra de las Minas, *Kellerman* 8001. Sierra de las Minas, opposite El Rancho, alt. 690–750 meters, *Kellerman* 7640, 7990.—Dept. Petén: Lake Petén, San Andrés, *Lundell* 3237 (type collection). Lake Petén, *Lundell* 3194. La Libertad, *Lundell* 3560.—Dept. Chiquimula, Caracol Mountain, 1.5 miles north of Quezaltepeque, alt. 1,200–1,400 meters, *Steyermark* 31396; a tree of 6 meters; fruit green, subglobose; growing in open chaparral on grassy, rocky slopes.—Dept. Izabal: Bay of Santo Tomás, between Escobas and Santo Tomás, at sea level, *Steyermark* 39366; a tree. Río Dulce, between Livingston and 6 miles up river, on north side (right-hand side going up river), at sea level, *Steyermark* 39427; a tree; calyx dull, pale green; corolla creamy white, the tips of the lobes recurved. The distribution of the species within Guatemala is rather unusual, so much so that one might suspect that more than a single species was represented, but all the material now at hand appears to be conspecific, and must be so treated unless further collections reveal distinguishing characters.

Diospyros zacapana Standl. & Steyerm., sp. nov.—Arbuscula 4.5 m. alta, ramulis sat gracilibus subteretibus cinereis dense elevato-lenticellatis ut videtur primo sparse strigosis cito glabratis, internodiis brevibus; folia modica breviter petiolata subcoriacea, petiolo crassiusculo 7–10 mm. longo sparse strigoso vel fere glabro; lamina ovalis vel elliptico-ovalis, interdum elliptico-ovata, 9–13 cm. longa 4.5–7 cm. lata apice obtusa usque rotundata et brevissime apiculata, basi saepe inaequilatera obtusa vel rotundata, supra in sicco sublucida glabra, costa anguste subimpressa, venis prominulis, subtus fere concolor, cinereo-brunnescens, fere omnino glabra, costa gracili prominente, nervis lateralibus utroque latere ca. 9 teneris irregularibus angulo lato divergentibus prominentibus remote a margine arcuato-junctis, venulis prominulis laxe reticulatis; calyx ca. 12 mm. latus et 5 mm. longus breviter 4-lobus extus sparse scaberulus vel fere glaber, intus fulvo-sericeus; fructus globosus glaber basi et apice rotundatus, ca. 18 mm. diam.—Guatemala: Along stream below waterfall, Dept. Zacapa, Sierra de las Minas, trail between Río Hondo and waterfall, alt. 250–400 meters, October 10, 1939, *Julian A. Steyermark* 29490 (type in Herb. Field Mus.).

"Leaves membranaceous, dull green above, paler green beneath." This species is a relative of *Diospyros Yatesiana* Standl., which is conspicuously different in its acute or acuminate leaves.

STYRACACEAE

Styrax vulcanicola Standl. & Steyerm., sp. nov.—Arbor 15-metralis, ramulis crassis nodosis subangulatis, dense tomento stellato minuto indutis, pilis ferrugineis vel pallidis sessilibus; folia magna petiolata firme membranacea, petiolo crasso 2–2.5 cm. longo dense adpresseque stellato-tomentello; lamina elliptica vel oblongo-elliptica vulgo 16–20 cm. longa et 8–11 cm. lata, apice late obtusa vel subrotundata, basi late cuneato-obtusa, margine integro vel tantum undulato, supra in sicco viridis, fere omnino glabra, tantum ad costam basesque nervorum stellato-tomentosa, venulis prominulis arcte reticulatis, subtus griseo-viridis ubique tomento denso subadpresso arcte induta, pilis minutis, costa crassiuscula elevata, nervis lateralibus utroque latere ca. 10 teneris prominentibus irregularibus angulo recto vel paullo latiore adscendentibus, venis prominentibus arcte reticulatis; paniculae axillares laxe pauciflorae pauciramosae vix ad 5 cm. longae crasse pedunculatae, pedicellis crassis 5–8 mm. longis dense minute adpresso-stellato-tomentosis; calyx globoso-campanulatus 5 mm. altus basi obtusus, margine remote et brevissime repando-denticulato, extus ubique dense minuteque stellato-tomentellus; corolla 4-loba in alabastro tantum visa extus dense adpresso-stellato-tomentella.—Guatemala: Dept. San Marcos, between town of Tajumulco and Tecutla, northwestern slopes of Volcán de Tajumulco, alt. 1,800–2,500 meters, February 27, 1940, upper, dry slopes on ridge, *Julian A. Steyermark* 36801 (type in Herb. Field Mus.).

The most closely related species is the recently described *Styrax magnus* Lundell, of the Volcán de Tacaná, Chiapas. In that the shape and size of the leaves suggest *S. vulcanicola*, but the pubescence consists of much larger, relatively lax, soft, spreading hairs, making it fairly certain that two distinct species, as species of *Styrax* are divided, are represented.

OLEACEAE

Linociera domingensis (Lam.) Knobl. Bot. Centralbl. 61: 87. 1895. *Chionanthus domingensis* Lam. Tabl. Encycl. 1: 30. 1791. —The tree appears to be common in many parts of the Greater Antilles. Two collections of it are at hand from British Honduras. It has not been recorded heretofore from Guatemala, but the following collections, from widely separated and dissimilar regions, seem to represent it: Dept. Izabal, Lake Izabal, on shore, *Harry Johnson* 1285; a shrub with white flowers. Dept. Quezaltenango, in cafetal, Finca Pireneos, lower slopes of Volcán de Santa María, alt. 1,300–

1,500 meters, *Steyermark* 33262; a tree of 9 meters; leaves dark and shining above; flowers white. Dept. Izabal, between Milla 49.5 and ridge 6 miles from Izabal, Montaña del Mico, alt. 65–600 meters, *Steyermark* 38505, 38536; a tree of 9–12 meters, common in jungle; flowers white, with erect corolla lobes; leaves dull green above, paler green beneath.

Linociera oblanceolata Robinson, Proc. Amer. Acad. 49: 504. 1913.—The species was described from British Honduras, and has been collected several times in that country. It occurs also in the Department of Petén, Guatemala. There may be recorded here two recent collections, one from a new region of Guatemala, the other from extreme southern Mexico. Guatemala: Dept. Izabal, Río Dulce, *C. L. Wilson* 167; a tall shrub on river bank.—Mexico: La Palma, Balancán, Tabasco, June, 1939, *Matuda* 3284; a tree 4 meters high, the trunk 15 cm. in diameter; fruit purple. This and *L. domingensis* are much alike, but with flowering specimens, especially, it is easy to distinguish them. The petals of *L. oblanceolata* are exceedingly narrow, almost filiform, while those of *L. domingensis* are rather broadly linear and flat.

LOGANIACEAE

Strychnos Peckii Robinson, Proc. Amer. Acad. 49: 504. 1913.—Previously known only from the forests of British Honduras, this well marked species has been found recently in Guatemala: Dept. Izabal: Near Puerto Barrios, wet thicket, at sea level, *Standley* 73049. Near Entre Ríos, wet forest, alt. 18 meters, *Standley* 72591. Between Virginia and Lago de Izabal, Montaña del Mico, alt., 50–500 meters, *Steyermark* 38873. The notes accompanying the last collection are as follows: A vine; fruit the size of an apple, buff outside, white within; leaves coriaceous, rich, dull green above, pale green beneath, the young leaves rich, light green above; calyx pale green; corolla tube pale yellowish green, the lobes buff-yellow, inside buff yellowish with white hairs at the base.

Strychnos tabascana Sprague & Sandw. Kew Bull. 1927: 128. 1927; Hook. Icon. *pl. 3223*. *S. panamensis* var. *hirtiflora* Standl. Field Mus. Bot. 11: 138. 1932. *S. hirtiflora* Lundell, Bull. Torrey Club 64: 556. 1937.—The type of *S. panamensis* var. *hirtiflora* was collected in British Honduras (*Schipp* S301); that of *S. tabascana* at San Sebastián, Tabasco, Mexico. The species is known at present from Tabasco and British Honduras, but it is probable that sterile specimens from Guatemala and perhaps also from Honduras repre-

sent this species, rather than *S. panamensis* Seem., to which they have been referred. Plants of this genus are plentiful throughout most of the lowlands of Central America, but it is unusual to find them in bloom, at least during the winter months. The following new collections of *S. tabascana* may be placed on record: British Honduras: El Cayo District, Cocquericot, Belize River, on trees at river edge, a woody vine, the flowers whitish, fragrant, *Lundell* 6095. Maskall, *Gentle* 1210.—Mexico: La Palma, Balancán, Tabasco, a woody vine in advanced forest, the flowers yellowish white, *Matuda* 3285.

GENTIANACEAE

Curtia tenella (Mart.) Cham. Linnaea 8: 13. 1833. *Schuebleria tenella* Mart. Nov. Gen. & Sp. 2: 117. 1827.—A small and rather tenuous plant, easily overlooked where it grows among grasses, commonly in savannas or in pine forest, and on that account, probably less often collected than its actual occurrence might warrant. It grows in Honduras and Panama, and far southward in South America, and has been reported (in Mart. Fl. Bras.) from the state of Oaxaca, Mexico. One collection may be cited from Guatemala: Dept. Chiquimula, dry, rocky, open places, Montaña Castilla, vicinity of Montaña Cebollas, along Río Lucía Saso, 3 miles southeast of Quezaltepeque, alt. 1,200–1,500 meters, November, 1939, *Steyermark* 31218. Corolla white.

Leiphaimos lutea Morton, Journ. Wash. Acad. Sci. 27: 310. 1937.—The type was collected near El General, Costa Rica, at 1,130 meters, and no other material has been reported. Specimens collected in Guatemala agree perfectly with a photograph of the type and with the original description: Dept. Chiquimula, Cerro Tixixí, 3–5 miles north of Jocotán, alt. 500–1,500 meters, *Steyermark* 31580. Dept. Izabal, lowland jungle at Punta Palma, across the bay from Puerto Barrios, *Steyermark* 39862. Stems white, the corolla tube yellow or creamy white, the lobes rich yellow.

Lisianthus auratus Standl. Trop. Woods 37: 29. 1934.—Known heretofore only from the type, collected at Siguatepeque, Honduras, at 1,110 meters. It occurs also in Guatemala: Dept. Chiquimula, Cerro Tixixí, 3–5 miles north of Jocotán, alt. 500–1,500 meters, in ravine near summit, November, 1939, *Steyermark* 31603. A shrub as much as 2.5 meters high; corolla tube yellow, the lobes erect, greenish outside; leaves thin, glabrous, somewhat succulent, dark green above, and paler green beneath.

Lisianthus calciphilus Standl. & Steyerm., sp. nov.—Suffrutex ramosus glaber, ramis subtetragonis gracilibus viridibus, internodiis plerumque foliis brevioribus; folia inter minora breviter petiolata in sicco crassa, petiolo crasso alato usque 4 mm. longo; lamina ovata usque oblongo-lanceolata 3–4.5 cm. longa 1–2 cm. lata acuminata vel longiacuminata, basi obtusa vel abrupte contracta et acuta, supra sublucida, costa impressa, nervis occultis, subtus fere concolor, costa tenera prominente, e basi triplinervia, nervis aliis lateralibus nullis; flores ut videtur lutei cymoso-corymbosi, corymbis foliatis vel bracteatis subdense multifloris 9–11 cm. longis et ultra, bracteis omnibus foliaceis, superioribus multo reductis et linearibus vel subulatis, floribus vulgo umbellato-aggregatis, pedicellis erectis angulatis rigidis plerumque 5–8 mm. longis; calyx ca. 7 mm. longus adpressus angulatus fere ad basin lobatus, segmentis lineari-lanceolatis longe angusteque attenuatis; corolla 30–34 mm. longa, tubo striato-costato supra ovarium paullo constricto, orem versus sensim dilatato, apice 4 mm. lato, lobis suberectis ovali-ovatis ca. 6 mm. longis breviter caudato-acuminatis; stamina tubo corollae paullo longiora, stylo exserto.—Guatemala: On limestone cliff, Finca Los Alpes, Dept. Alta Verapaz, alt. 1,200 meters, March 22, 1939, *C. L. Wilson* 356 (type in Herb. Field Mus.).

Closely related to *L. collinus* Standl., but in that species of British Honduras the leaves have two evident pairs of nerves on each side, and the inflorescence is sparsely flowered, with some of the pedicels becoming greatly elongate.

Lisianthus elatus Standl. & Steyerm., sp. nov.—Herba erecta elata glabra 1–1.5 m. alta ramosa, caulibus teretibus viridibus crassis, internodiis foliis longioribus; folia magna sessilia plerumque lanceolato-oblonga 9–14 cm. longa 3–4 cm. lata subito longe angusteque acuminata, basi obtusa, supra viridia, costa subsulcata, nervis occultis, subtus pallidiora, costa elevata, nervis lateralibus utroque latere 2 prominentibus pallidis angulo angusto adscendentibus; folia floralia multo minora late ovata; flores in cymas densas multifloras congesti, cymis paniculam elongatam latamque grandem efformantibus longipedunculatis, ramis cymae brevibus secundifloris, pedicellis crassis vix ad 2 mm. longis; calyx arcte adpressus 6–8 mm. longus ad medium vel interdum profundius lobatus, segmentis lanceolato-attenuatis; corolla in sicco straminea lucida 25–28 mm. longa in statu fructifero persistens, tubo valde costato supra ovarium constricto, fauce ca. 4 mm. lato, lobis erectis rotundo-ovatis 2.5–3 mm. longis apice abrupte apiculatis; stamina inclusa; stylus breviter

exsertus; capsula lanceolato-oblonga 8 mm. longa obtusa lucidissima, ut videtur in statu vivo viscida.—Guatemala: Base of pine slopes around rocks and seepage, Dept. Izabal, between Milla 49.5 and ridge 6 miles from Izabal, Montaña del Mico, alt. 65–600 meters, April 1, 1940, *Julian A. Steyermark* 38562 (type in Herb. Field Mus.).

"Leaves membranaceous, rich green above, pale green beneath; calyx pale grass-green; corolla tube yellow-green, the lobes erect-ascending, pale green; anthers pale yellow; stigma pale green." The most closely related species is *Lisianthus collinus* Standl., described from the Jacinto Hills of British Honduras. That, however, has a lax inflorescence with scattered flowers, some of which are borne on greatly elongate pedicels.

APOCYNACEAE

Odontadenia caudigera Woodson, Ann. Mo. Bot. Gard. 23: 384. 1936.—Described from British Honduras and, so far, reported only from that country. Two collections are at hand from Guatemala: Dept. Izabal: Near Entre Ríos, wet thicket, *Standley* 72707; a small vine; corolla greenish yellow. Between Milla 49.5 and ridge 6 miles from Izabal, Montaña del Mico, alt. 65–600 meters, *Steyermark* 38492; a vine in jungle thickets; leaves firmly membranaceous, rich green above, paler grass-green beneath; corolla tube pale greenish outside. The species is very closely related to *O. grandiflora* (Mey.) Miq., so much so that it is doubtful whether both can be maintained. According to Dr. Woodson's key in *North American Flora* (29: 166. 1938), some of the Costa Rican material would seem referable to *O. caudigera*. The two species are separated by corolla size, and this is exceedingly variable in the series of specimens examined by the writers.

Tonduzia longifolia (A. DC.) Woodson, N. Amer. Fl. 29: 122. 1938. *Rauwolfia longifolia* A. DC. in DC. Prodr. 8: 338. 1844.—The species has a wide range, being reported by Woodson (loc. cit.) from Veracruz and Oaxaca, Salvador, and Costa Rica. The following collections represent distribution in two other countries, and the species is to be expected, of course, in Nicaragua: Honduras: Pito Solo, Lake Yojoa, Dept. Comayagua, alt. 600 meters, a tree of 18 meters in dense, tropical forest, the flowers white, *J. B. Edwards* P-448.—Guatemala: Dept. Quezaltenango, above, Santa María de Jesús, alt. 1,650 meters, *Standley* 67272, 67185; a shrub of 3 meters. Dept. Guatemala, near Finca La Aurora, alt. 1,500 meters, *Ignacio Aguilar* 213; local name Chilindrillo. Dept. Escuintla, near Escuintla,

alt. 135–300 meters, *Standley* 63942; a shrub of 2 meters. Dept. Escuintla, along Río Guacalate, alt. 500 meters, damp thicket, *Standley* 58242; a shrub or small tree. Dept. Escuintla, near Las Lajas, dry thicket, *Standley* 63417. Dept. Quezaltenango, slopes of Volcán de Santa María, between Finca Pireneos and Los Positos, alt. 1,300–1,500 meters, *Steyermark* 33723; a tree of 7.5–15 meters, growing scattered in a cafetal.

Tonduzia macrantha Woodson, Ann. Mo. Bot. Gard. 24: 12. 1937.—The type is *Skutch* 871, from Volcán de Zunil, Dept. Quezaltenango, Guatemala, at 1,650 meters. One additional collection, in flower, may be cited: Guatemala: Dept. San Marcos, barrancos 6 miles south and west of town of Tajumulco, northwestern slopes of Volcán de Tajumulco, alt. 2,300–2,800 meters, February, 1940, *Steyermark* 36624. A tree of 9 meters; leaves firmly membranaceous, rich grass-green above, pale blue-green beneath.

Vallesia flexuosa Woodson, Ann. Mo. Bot. Gard. 24: 14. 1937.—In *North American Flora* (29: 140. 1938) the species is said to be known only from the type locality, Zarcero, Costa Rica, where it was first collected by Brenes. The following recent collections add some information to what was previously known about the species: Costa Rica: Zarcero, alt. 1,950 meters, April, 1937, *Austin Smith* 4101; a small tree of scattered distribution; none seen more than 10 cm. in trunk diameter; flowers white; fruits 25 mm. long and 15 mm. thick, pale cream-colored when ripe; sap of tree sticky, colorless; trunk gray-brown. Zarcero, alt. 1,710 meters, September, 1937, *Smith* A386; a large shrub, the bark light brown, granulated; here gregarious as an undergrowth; leaves moderately lustrous; emitting a milky sap; main flowering period in May, again coming into flower in September. Zarcero, alt. 1,650 meters, January, 1938, *Smith* H148; a shrub of 3 meters, with several basal stems, the bark very dark brown; corolla waxy white.

Vallesia mexicana Muell. Arg. Linnaea 30: 393. 1860.—In *North American Flora* (29: 141. 1938) the species is reported from the Mexican states of Veracruz, Puebla, and Jalisco. The following collections indicate a substantial extension of range: Mexico: Volcán de Tacaná, north slope, alt. 2,100 meters, Chiapas, *Matuda* 2977.—Guatemala: Volcán de Acatenango, *Kellerman* 4821. Dept. Sacatepéquez, above Las Calderas, alt. 1,800 meters, in damp barranco, *Standley* 59960; a tree of 9–12 meters; fruit white. Dept. San Marcos, dry barranco slopes, vicinity of town of Tajumulco, Volcán de Tajumulco, alt. 2,300–2,800 meters, *Steyermark* 36907; local name

San Pedro Martín; a tree of 12 meters; leaves firmly membranaceous, dark green and shining above, paler green beneath; flowers fragrant; corolla tube greenish white, the lobes spreading; fruit 2.5 cm. long, oblong.

CONVOLVULACEAE

Aniseia cernua Moric. Pl. Nouv. Amér. 56. 1838. *A. ensifolia* Choisy, Mém. Soc. Phys. Genève 8: 66. 1838. *Jacquemontia chiapensis* Brandeg. Univ. Calif. Publ. Bot. 6: 60. 1914.—Heretofore only two species of *Aniseia* have been recognized in Mexico and Central America, *A. mexicana* Loes. of Chiapas, noteworthy for its ovate-cordate leaves, and *A. martinicensis* (Jacq.) Choisy. The latter has a wide distribution in South America, from Colombia and the Guianas through much of Brazil and eastern Peru, and it occurs in the West Indies, at least in Martinique. In Central America it is known, so far as available specimens show, from Costa Rica and Panama. An attempt to determine a plant of recent collection in Guatemala reveals the fact that the plant of northern Central America and southern Mexico is a different species, and apparently *A. cernua* Moric., in which the outer sepals are truncate or broadly rounded at the base and not decurrent upon the pedicels. In *A. martinicensis* the outer sepals are acutish at the base and conspicuously decurrent. There is some doubt as to the specific value of these characters, but the two species have been recognized generally. There is a bare possibility that the plants of Central America and Chiapas represent a distinct species, although no differentiating characters are apparent in the series of specimens studied. If such should prove to be the case, the name *Jacquemontia chiapensis* is available for the species. It may be added that the plant of Cuba that has been referred to *A. martinicensis* is apparently *A. cernua;* at least, it is not *A. martinicensis.* The following collections of *A. cernua* from Mexico and Central America may be cited: Mexico: Tonalá, Chiapas, *Purpus* 6916, type collection of *Jacquemontia chiapensis.*—British Honduras: All Pines, open forest, at sea level, rare, a vine of 2 meters, the flowers white, *Schipp* S145.—Guatemala: Near San José, Dept. Escuintla, at sea level, moist thicket, a small, herbaceous vine, *Standley* 64229. Dept. Jutiapa, Lago de Güija, southeast of Asunción Mita, alt. 470–500 meters, in grassy places about margin of the lake, *Steyermark* 31818. Dept. Jutiapa, Lago de Atescatempa, south of Asunción Mita, alt. 500–800 meters, along lake margin in dry soil, *Steyermark* 31856; creeping; leaves grass-green, the corolla white. A sterile specimen from the Department

of Yoro, Honduras, probably is referable to this species and not to *A. martinicensis*.

Breweria sulphurea Brandeg. Univ. Calif. Publ. Bot. 4: 384. 1913.—The type is *Purpus* 5998 from Baños del Carrizal, Veracruz, Mexico, and no other material is known to the writers except the following recent collection: Guatemala: Dept. Zacapa, rocky slopes between San Pablo and Pepezca, alt. 200–250 meters, October, 1939, *Steyermark* 29337. Climbing in thickets; corolla white; leaves dull olive-green above, yellow-green beneath. The genus is new for Central America.

Ipomoea heptaphylla (Rottl. & Willd.) Voight, Hort. Sub. Calc. 360. 1845. *Convolvulus heptaphyllus* Rottl. & Willd. Neue Schrift. Ges. Nat. Fr. 4: 196. 1803.—The plant is a rather curious one, well marked among North American *Ipomoea* species by its elongate, very slender, coiled tendrils and by its 5-parted leaves. For an account of its distribution and of its occurrence in the United States see Charles Baehni, Rhodora 38: 164. 1936. In tropical continental North America the species has been reported only from Tuxpeña, Campeche, Mexico, but it may now be recorded for Central America: Guatemala: Dept. Jutiapa, potreros between Trapiche Vargas and Asunción Mita, alt. 500–600 meters, November, 1939, *Steyermark* 31864; creeping; leaves dull green above; corolla lilac. Dept. Zacapa, trail between Río Hondo and waterfall, Sierra de las Minas, alt. 250–400 meters, *Steyermark* 29498; climbing in open thickets on dry slopes; corolla purple above, white below.

POLEMONIACEAE

Cobaea Steyermarkii Standl., sp. nov.—Herba gracilis scandens, caule tenui tantum prope nodos sparse breviterque villosulo, aliter glabro, internodiis bene elongatis; folia sessilia plerumque 4-foliolata, interdum 6-foliolata, rhachi gracili sparse breviterque villosula vel paullo puberula, saepe fere glabra; foliola tenuiter membranacea graciliter petiolulata oblonga usque ovato-oblonga vel obovato-oblonga 2.5–5 cm. longa 1.2–2.2 cm. lata acuta vel acuminata et mucronata, basi plus minusve inaequali truncata vel subcordata, glabra; pedunculi gracillimi usque 22 cm. longi glabri vel prope apicem sparse minute puberuli; sepala fere libera lineari-lanceolata longe angusteque attenuata ca. 2 cm. longa et basi 4 mm. lata glabra; corolla campanulata 2 cm. longa 1.7 cm. lata extus supra medium sparse breviterque villosula, lobis late triangularibus subobtusis tubo plus quam duplo brevioribus; filamenta ut videtur longiexserta;

capsula anguste ellipsoidea lucida basi et apice acutiuscula glabra sessilis 4.5 cm. longa 1.5 cm. lata.—Guatemala: Dept. San Marcos, a vine in thickets on Loma Corona, 9 miles northwest of El Porvenir, southwest-facing slopes of Volcán de Tajumulco, alt. 1,300–2,000 meters, March 14, 1940, *Julian A. Steyermark* 37759 (type in Herb. Field Mus.).

"Leaves thin, dull green above, paler green beneath and suffused with purplish; calyx lobes in anthesis pale green with purple margins and purple streaks, erect in anthesis, reflexed in fruit; corolla pale green at first, yellow in anthesis." The species is noteworthy for the unusually small flowers. It is perhaps related to *C. Viorna* Standl., also of the Department of San Marcos, but in that the corolla is 3.5–4 cm. long.

VERBENACEAE

Clerodendron fragrans (Vent.) R. Br. f. **pleniflorum** (Schauer) Standl. & Steyerm., stat. nov. *C. fragrans β pleniflora* Schauer in DC. Prodr. 11: 666. 1847.—In Central America this is a common garden plant that has become thoroughly naturalized in many regions. Apparently only the "double-flowered" form is known in the region. This has usually been termed a variety, but obviously deserves status only as a mere form.

Rehdera mollicella Standl. & Moldenke, Repert. Sp. Nov. 39: 51. 1935.—The type is *Kellerman* 7992 from El Rancho (erroneously given as "Raucho" in the original publication), "Baja Verapaz," Guatemala. El Rancho is now in the Department of Progreso. Several additional collections of the species have been made recently: Guatemala: Dept. Chiquimula, rocky slopes, base of Cerro Colorado, along Río Jocotán, near Jocotán, alt. 400 meters, November, 1939, *Steyermark* 31547. Dept. Jutiapa, dry plateau in chaparral between railroad station of Mita and town of Asunción Mita, alt. 650 meters, November, 1939, *Steyermark* 31754; a tree 6–7.5 meters tall; leaves coriaceous. Dept. Zacapa, top of rocky slopes on edge of bluff, between San Pablo and Pepezca, alt. 200–250 meters, *Steyermark* 29352. Dept. Zacapa, dry, rocky slopes bordering Río Motagua, vicinity of Pepezca, alt. 170–200 meters, *Steyermark* 29323; a tree of 7.5 meters; fruit brown-purple.

SOLANACEAE

Capsicum lanceolatum (Greenm.) Morton & Standl., comb. nov. *Brachistus lanceolatus* Greenm. in Donn. Sm. Bot. Gaz. 37:

212. 1904.—Based on *J. D. Smith* 1837 from Chucaneb, Alta Verapaz, Guatemala, at 1,850 meters. The following recent collections extend considerably the known range of the species: Guatemala: Dept. Quezaltenango: In forest, Palmar, alt. 1,290 meters, *Skutch* 1450; a shrub a meter high, the flowers white. Finca Pireneos, below Santa María de Jesús, alt. 1,350–1,380 meters, damp, dense forest or thickets, *Standley* 68235, 68244, 68294; a shrub a meter high; corolla yellowish white; fruit tomato-red. Quebrada San Gerónimo, Finca Pireneos, lower slopes of Volcán de Santa María, alt. 1,300–2,000 meters, *Steyermark* 33357; local name, Yerba de pajarito; a shrub of 1.5 meters, the leaves thin, paler beneath.—Dept. Sacatepéquez: Near Pastores, alt. 1,560–1,650 meters, damp ravine, *Standley* 59930. Barranco above Dueñas, damp forest slope, alt. 1,590–1,800 meters, *Standley* 63153. An erect shrub of 2 meters, or a small, slender tree.

Capsicum meianthum (Donn. Sm.) Standl. & Steyerm., comb. nov. *Brachistus meianthus* Donn. Sm. Bot. Gaz. 57: 424. 1914.—The type is *Tuerckheim* 1134 from Pansamalá, Verapaz, Guatemala, and *Tuerckheim* 3936 from Panzal, Baja Verapaz, also was listed with the original description. The following collections represent the species: Guatemala: Dept. Quezaltenango, in forest clearing, Volcán de Zunil, alt. 1,680 meters, August, 1934, *Skutch* 969. Dept. Quezaltenango, along Quebrada San Gerónimo, Finca Pireneos, lower southern slopes of Volcán de Santa María, alt. 1,300–2,000 meters, *Steyermark* 33408; local name Flor del río; a shrub of 1.5–2 meters; corolla lobes cream-colored; leaves thin, dull, dark green above. Dept. San Marcos, above Finca El Porvenir on Todos Santos Chiquitos, lower southern slopes of Volcán de Tajumulco, alt. 1,300–1,500 meters, on upper slopes *Steyermark* 37168; a shrub of 3 meters.

Capsicum tetramerum Standl. & Morton, Bot. Ser. Field Mus. 18: 1045. 1938.—Based upon a single collection from El General, Costa Rica. The following collection was determined by Mr. C. V. Morton: Guatemala: Dept. Escuintla, damp thicket along Río Guacalate, alt. 600 meters, December, 1938, *Standley* 60210. Suffrutescent, 1.5 meters high; corolla pale yellow.

Lycianthes chiapensis (Brandeg.) Standl. Field Mus. Bot. 11: 173. 1936. *Solanum chiapense* Brandeg. Univ. Calif. Publ. Bot. 6: 192. 1915.—So far as we know, the species proper is known only from the type collection, *Purpus* 7328 from Finca Irlanda, Chiapas. However, *Purpus* 7166 from Cerro del Boquerón, Chiapas, was distributed by Brandegee as "*Solanum chiapense* Brandg.? var.?" His

perplexity as to the disposition to be made of the second collection is duplicated by that of the present writers, now that several additional collections of the same form have been made in Guatemala. Typical *Lycianthes chiapensis* is quite glabrous throughout. The specimens cited below differ in having a sparse but evident pubescence of rough, stellate hairs. There seem to be no other differences between the two forms, except that the leaves of the variety are slightly broader, on the average, and somewhat more obtuse at the apex. Further material may show that two distinct species are represented, but it appears more probable that the form here described as a variety deserves no higher rank than that now assigned to it.

Lycianthes chiapensis var. **sparsistellata** Standl. & Steyerm., var. nov.—A forma typica speciei non differt nisi foliis aliquanto latioribus lanceolato-oblongis usque oblongo-ellipticis 4–9.5 cm. longis 2–4 cm. latis, apice subrotundatis usque longiuscule acuminatis, supra sparse pilis rigidis breviter stipitatis stellatis conspersis, subtus sparse vel dense pilis parvis pauciradiatis breviter stipitatis vel fere sessilibus conspersis; rami sparse vel dense stellato-hirtelli vel interdum fere glabri; calyx pedicellique pilis parvis sessilibus vel breviter stipitatis pauciradiatis sparse vel dense conspersi.—Guatemala: Dept. Chiquimula, Cerro Tixixí, 3–5 miles north of Jocotán, alt. 500–1,500 meters, slopes of cloud forest on top, adjacent to barranco, November 10, 1939, *Julian A. Steyermark* 31555 (type in Herb. Field Mus.); a shrub of 3 meters; leaves thin, dark green above; berries green. Dept. Zacapa, cloud forest, summit of Sierra de las Minas, vicinity of Finca Planados, alt. 2,500 meters, *Steyermark* 29970; a vine. Dept. Quezaltenango, Montaña Chicharro, lower south-facing slopes of Volcán de Santa María, 2–4 miles south of Santa María de Jesús, alt. 1,400–1,500 meters, *Steyermark* 34284; a scandent shrub 6 meters long; leaves membranaceous, dull green above, grass-green beneath; fruit orange, oblong-obovoid, 1 cm. broad.—Mexico: Cerro del Boquerón, Chiapas, June, 1914, *C. A. Purpus* 7166.

Lycianthes ocellata (Donn. Smith) Morton & Standl., stat. nov. *Solanum sideroxyloides* Schlecht. var. *ocellatum* Donn. Smith, Bot. Gaz. 14: 28. 1889. *Lycianthes sideroxyloides* (Schlecht.) Bitter, subsp. *ocellata* Bitter, Abh. Nat. Ver. Bremen 24: 405. 1919.—This plant differs so conspicuously from *L. sideroxyloides*, as indicated by Captain Smith when he assigned it varietal rank, that there is no question that a fully distinct species is represented. The type was

collected at Pansamalá, Alta Verapaz, Guatemala, alt. 1,140 meters, *J. D. Smith* 1155. The following Guatemalan collections represent the species: Chihob, Alta Verapaz, alt. 900 meters, along trail, *Harry Johnson* 913. Near Cobán, Alta Verapaz, wet pine forest, alt. 1,260–1,440 meters, *Standley* 69180; common; a shrub 1.5 meters high. The berries are red.

Solanum Muenscheri Standl. & Steyerm., sp. nov.—Frutex inermis ramosus, ramis crassiusculis subteretibus viridibus ubique dense pilis minutis stellatis fere microscopicis tomentellis, internodiis brevibus; folia modica singula petiolata herbacea, petiolo crassiusculo 8–15 mm. longo minute stellato-tomentello; lamina lineari-lanceolata 6–11.5 cm. longa 1–2 cm. lata apicem angustum acutum versus longe sensimque attenuata, basi obtusa vel rotundata, integra, fere concolor, utrinque densissime pilis minutis sessilibus cinereis dense induta, costa tenera subtus prominula, nervis lateralibus numerosis inconspicuis angulo lato divergentibus; inflorescentiae laterales extra-axillares racemosae vel umbellato-racemosae pluriflorae vel multiflorae foliis vulgo multo breviores breviter pedunculatae vel sessiles, floribus umbellatis, umbellis paucifloris breviter pedunculatis, pedicellis plerumque 8–15 mm. longis post anthesin reflexis sursum incrassatis, densissime pilis ochraceis ramosis sessilibus vel pro parte stipitatis tomentosis; calyx 5–6 mm. longus in statu fructifero paullo accrescens densissime stellato-tomentosus ad medium lobatus, lobis ovatis vel late ovatis erectis obtusis; corolla ut videtur alba ca. 7 mm. longa extus dense stellato-tomentosa ad medium vel profundius lobata, lobis oblongo-ovatis obtusis vel acutiusculis patentibus, intus sparse tomentellis; antherae oblongae apice retusae 3 mm. longae; ovarium sparse saltem ad apicem stellato-pilosulum; bacca globosa glabra lucida ca. 1 cm. diam.—Guatemala: Dept. Sololá, mountain slope near Santa María, alt. 3,150 meters, April 14, 1937, *W. C. Muenscher* 12360 (type in Herb. Field Mus.). Dept. San Marcos, dry, grassy plateau flat along road between San Sebastián at km. 21 and km. 8, 8–18 miles northwest of San Marcos, alt. 2,700–3,800 meters, *Steyermark* 35633; a shrub about 3 meters high; corolla deep lavender-purple; anthers light yellow; leaves, when fresh, dark green on the upper surface, gray-green on the lower surface.

It is impossible to suggest any close relationship for this well marked and somewhat isolated species. It is noteworthy for the long and very narrow leaves, grayish in appearance because of the abundant indument of minute, branched hairs.

Solanum Rovirosanum Donn. Smith, Bot. Gaz. 48: 297. 1909. —The species was based upon two collections, *Tuerckheim* 8716 from Cubilgüitz, Alta Verapaz, Guatemala, and *Rovirosa* 544 from Mayito, Tabasco, Mexico. Several new collections are at hand, the first two determined by Mr. C. V. Morton: Tabasco: San Isidro, in advanced forest, a shrub with white flowers, *Matuda* 3359.—Guatemala: Dept. Quezaltenango, wet forest, Fuentes Georginas, western slope of Volcán de Zunil, alt. 2,850 meters, *Standley* 67473; also No. 67492; a shrub of 3 meters, the corolla white. Dept. San Marcos, above Barranco Eminencia, alt. 2,700 meters, *Standley* 68502.

Solanum verapazense Standl. & Steyerm., sp. nov.—Frutex 1.5 m. altus, ramis crassiusculis tortuosis subteretibus, vetustioribus cinereis, junioribus brunneis dense stellato-tomentosis, pilis mollibus multiradiatis fulvis longe vel breviter stipitatis diutius persistentibus, internodiis brevibus, ramis armatis, aculeis 5–10 mm. longis rectangule divergentibus vel leviter recurvis brunnescentibus vel stramineis, basi valde dilatatis et compressis glabris lucidis; folia parva singula breviter petiolata herbacea, petiolo crasso 5–8 mm. longo interdum prope basin aculeo 1 longo crasso onusto, dense ut ramis stellato-tomentoso; lamina ovata vel oblongo-ovata 3.5–7 cm. longa 1–4 cm. lata, subacuta usque acuminata, basi obtusa vel subrotundata, integra vel interdum breviter sinuato-lobata, supra viridescens aliquanto glandulosa sat dense molliterque stellato-pilosa, pilis pluriradiatis sessilibus vel pro parte breviter stipitatis, radio centrali ceteris subaequali, subtus fulva densissime stellato-tomentosa, pilis fere omnibus longistipitatis, lamina subtus prope basin aculeo 1 elongato onusta; inflorescentiae oppositifoliae 1–3-florae vel interdum pluriflorae, foliis duplo breviores inermes, pedunculo usque 7 mm. longo, pedicellis crassis tomentosis et glandulosis vix ultra 3 mm. longis; calyx angustus basi acutus 4 mm. longus extus viscide stellato-tomentosus, ad medium lobatus, lobis ovatis vel lanceolatis acutis vel acuminatis erectis; corolla alba 1 cm. longa fere ad basin lobata, segmentis oblongis obtusis extus dense stellato-hispidulis, intus fere glabris; antherae 4–5 mm. longae sursum paullo angustatae.—Guatemala: Dept. Baja Verapaz, dry, rocky hills north of Santa Rosa, in forest of pine and oak, March 30, 1939, *Paul C. Standley* 69756 (type in Herb. Field Mus.).

The relationship is obviously with *S. yucatanum* Standl. of the Yucatan Peninsula, but in that the pubescence is relatively close and appressed, not at all like the dense and soft covering of chiefly long-stipitate, much interlaced hairs found in *S. verapazense*.

SCROPHULARIACEAE

Pedicularis mexicana Zucc. ex Bunge, Bull. Phys. Math. Petrop. 1: 384, 1843.—The species seems not to have been reported from Central America, but it was collected recently in Guatemala: Dept. Quezaltenango, dry, open, rocky places, summit of Volcán de Zunil, alt. 3,800 meters, January, 1940, *Steyermark* 34843. The plants are in fruit. The vernacular name is recorded as Jazmín, a not very appropriate term, and perhaps used only for this occasion.

GESNERIACEAE

Alloplectus calochlamys Donn. Smith, Bot. Gaz. 27: 437. 1899.—The plant was reported by its describer from Sacoyojú and Pansamalá, Alta Verapaz, Guatemala, and appears to be known only from that department. Several recent collections have been made: Guatemala (Dept. Alta Verapaz): Finca Volcán, alt. 810 meters, in virgin forest, February, 1939, *C. L. Wilson* 253. Saquijá, 43 km. northeast of Cobán, alt. 1,200 meters, on rocks in damp, limestone thickets, *Standley* 70161; a shrub of 30–60 cm.; calyx pale red. Finca Socuyó, northeast of Carchá, alt. 1,350 meters, on open limestone, *Standley* 70288.

Klugia azurea Schlecht. Linnaea 8: 248. 1833.—A handsome plant because of its showy, violet-blue flowers, this herb has been reported previously only from Mexico and Costa Rica. It was collected in 1940 in western Guatemala: Dept. Suchitepéquez, along quebrada southeast of Río Samalá, southwestern lower slopes of Volcán de Zunil, vicinity of Finca Montecristo, alt. 1,200–1,300 meters, *Steyermark* 35218. Dept. San Marcos, barrancos 6 miles south and west of town of Tajumulco, northwestern slopes of Volcán de Tajumulco, alt. 2,300–2,800 meters, along moist banks of Quebrada Tohuotch, *Steyermark* 36602; corolla dark blue.

Solenophora Pirana Morton, Phytologia 1: 149. 1935.—The type was collected near Chichavac, Dept. Chimaltenango, Guatemala, and an additional collection was listed from Santa Elena, above Tecpám, in the same department. Two recent collections from western Guatemala have been determined by Mr. Morton as of this species, and two Mexican ones appear to be conspecific: Guatemala: Dept. Quezaltenango, Fuentes Georginas, western slope of Volcán de Zunil, alt. 2,850 meters, *Standley* 67352, 67491; an herb or shrub 1.5–3 meters high, usually simple; corolla yellow; common in wet forest, and showy. Dept. San Marcos, along stream in shade, Quebrada Canjulá, between Sibinal and Canjulá, Volcán de Tacaná,

alt. 2,200–2,500 meters, *Steyermark* 36066; shrubby herb 3 meters tall. Dept. San Marcos, between Todos Santos and Finca El Porvenir, lower to middle slopes of Volcán de Tajumulco, alt. 1,300–3,000 meters, *Steyermark* 36992; an herb 2.5–3 meters tall; corolla rich, deep yellow, spotted with maroon. Dept. San Marcos, upper forested slopes of Volcán de Tajumulco, between Las Canojas and top of ridge, 7 miles from San Sebastián, alt. 3,300–3,900 meters, *Steyermark* 35819.—Mexico: Chiquihuite, Volcán de Tacaná, Chiapas, alt. 2,800 meters, *Matuda* S-227, 2832.

Solenophora Purpusii Brandeg. Univ. Calif. Publ. Bot. 6: 65. 1914. *Episcia Purpusii* Brandeg. op. cit. 194. 1915.—The type was collected on Cerro del Boquerón, Chiapas. The plant has been re-collected in that state, and has been found to extend to Guatemala: Mexico: Volcán de Tacaná, Chiapas, alt. 1,000–2,000 meters, *Matuda* 2454.—Guatemala: Dept. San Marcos, slopes of barrancos tributary to and bordering Río Vega, between San Rafael at northeast portion of Volcán de Tacaná and Guatemala-Mexico boundary, alt. 2,500–3,000 meters, in moist ravine, *Steyermark* 36371; an herb 2.5 meters tall; corolla deep yellow; calyx green; leaves thin, membranaceous, dark green above, paler green beneath; petioles reddish; stems olive-green.

ACANTHACEAE

Neohallia Borrerae Hemsl. Biol. Centr. Amer. Bot. 2: 519. 1882.—The type of the single species of the genus was collected in the state of Chiapas, Mexico, and the plant has been detected in Veracruz. Recently it has been found also in the Occidente of Guatemala: Dept. San Marcos, above Finca El Porvenir, on Todos Santos Chiquitos, lower south-facing slopes of Volcán de Tajumulco, alt. 1,300–1,500 meters, in thickets, *Steyermark* 37219; called Palma de monte; a shrub; leaves dull, dark green above, paler green beneath; calyx in anthesis purple-violet; corolla vermilion-coral, 2-lipped. The hard and almost ligneous capsule is about 4.5 cm. long, the seed-bearing portion being about 1 cm. thick, and much shorter than the thick stipe.

RUBIACEAE

Bouvardia dictyoneura Standl. N. Amer. Fl. 32: 109. 1921.—When published, a single collection was known, *E. W. Nelson* 3757 from Chicharras, Chiapas, Mexico. Several collections have been made during the past few years in Guatemala: Dept. Suchitepéquez, in forest, south slope of Volcán de Atitlán, alt. 2,070–2,370 meters,

October, 1934, *Skutch* 1509; a slender shrub 2 meters high, the flowers red. Dept. Suchitepéquez, on forested ridge, Finca Moca, alt. 1,230 meters, January, 1935, *Skutch* 2111; a slender shrub 1.5 meters high; flowers red. Dept. San Marcos, above Finca El Porvenir, between Todos Santos Chiquitos and Loma de la Paloma, south-facing slopes of Volcán de Tajumulco, alt. 1,400–1,700 meters, March, 1940, *Steyermark* 37292; leaves membranaceous, dull green above and strongly sulcate along the nerves, paler green beneath; corolla coral orange-red. Dept. San Marcos, between Canjulá and La Unión Juárez, near southeast portion of Volcán de Tacaná, alt. 2,000–3,000 meters, upper part of forested barranco, *Steyermark* 36425; calyx purple; a shrub 60 cm. high. Dept. San Marcos, Río Vega, near San Rafael and Guatemala-Mexico boundary, Volcán de Tacaná, alt. 2,500–3,000 meters, *Steyermark* 36276; flowers vermilion-coral. Dept. Quezaltenango, western slopes of Volcán de Zunil, opposite Santa María de Jesús, alt. 1,500 meters, *Steyermark* 35083; a shrub a meter high; corolla vermilion or deep orange.

Chiococca semipilosa Standl. & Steyerm., sp. nov.—Frutex subscandens ramosus, ramis gracilibus teretibus, vetustioribus fusco-brunneis, junioribus viridibus glabris, internodiis elongatis; stipulae persistentes minute pilosulae basi breviter connatae, parte lata basali triangulari 1 mm. longa subito in cuspidem linearem 2 mm. longum contracta; folia modica breviter petiolata firme membranacea, petiolo 2–3 mm. longo pilosulo; lamina lanceolata vel ovato-lanceolata vulgo 5–8 cm. longa et 1.5–3 cm. lata longiacuminata vel longe attenuato-acuminata, basi acuta vel breviter contracto-acuta, supra in sicco cinereo-viridis sparse minuteque patulo-pilosula, costa tenera prominente, subtus paullo pallidior dense breviterque hirtella, costa tenera prominente, nervis lateralibus utroque latere ca. 3 tenerrimis vix prominulis valde obliquis, venis obsoletis; racemi axillares singuli plerumque 5–7-flori foliis duplo breviores graciliter usque 2 cm. longe pedunculati, pedunculo ut rhachi pedicellisque hirtello, pedicellis gracilibus vulgo 3–7 mm. longis, bracteis lanceolatis vel subulatis parvis; calyx 1 mm. altus profunde dentatus, dentibus triangularibus erectis acutis; fructus ovali-orbicularis aliquanto compressus 4–5 mm. longus et fere aequilatus sparse hirtellus.—Guatemala: Dept. Chiquimula, Caracol Mountain, 1.5 miles north of Quezaltepeque, alt. 1,200–1,400 meters, November 7, 1939, *Julian A. Steyermark* 31406 (type in Herb. Field Mus.). Dry, wooded slopes, between Chiquimula and La Laguna, alt. 500–1,000 meters, *Steyermark* 30681.

A liana; leaves thin, dark green above, pale green beneath; fruit light green. The other Central American species of *Chiococca* differ in having quite glabrous foliage. The Guatemalan plant is related to the Mexican *C. pubescens* Standl., which has much broader leaves, obtuse or rounded at the base, and short-pilose branches.

Chiococca Steyermarkii Standl., sp. nov.—Frutex 2–3-metralis ut videtur dense subfastigiato-ramosus, ramis gracilibus sed rectis et subrigidis teretibus ochraceis rimulosis dense foliatis, internodiis foliis multo brevioribus dense minute puberulis; stipulae persistentes erectae e basi lata subulatae; folia parva brevissime petiolata crasse membranacea vel in sicco subcoriacea, petiolo crassiusculo vix ad 1.5 mm. longo; lamina lanceolato-linearis 15–23 mm. longa 2–4 mm. lata apicem obtusum versus sensim angustata, basin acutam versus breviter angustata, glabra, supra in sicco viridis, costa prominula, subtus paullo pallidior, costa tenera prominente, nervis venisque obsoletis; flores ut videtur axillares et solitarii, pedicellis recurvis fere filiformibus plerumque 5–8 mm. longis minute puberulis; hypanthium late ovoideum 2 mm. longum glabrum; calycis dentes ca. 1 mm. longi remoti subulati; corolla alba 10–11 mm. longa glabra, tubo e basi ad faucem sensim dilatato, fauce 4 mm. lato, lobis 4 late deltoideo-ovatis acutiusculis; antherae inclusae, filamentis filiformibus glabris; fructus albus subcompressus suborbicularis glaber 7 mm. longus et aequilatus.—Guatemala: Dept. San Marcos, Río Vega, near San Rafael and Guatemala-Mexico boundary, Volcán de Tacaná, alt. 2,500–3,000 meters, February 20, 1940, *Julian A. Steyermark* 36237 (type in Herb. Field Mus.).

In the whole genus *Chiococca* there probably is no other species so well defined as this one. The small, very narrow leaves and solitary flowers are altogether distinctive, and not matched in any other representative of the group.

Coutarea Lumaeana Baill. Adansonia 12: 301. 1879. *Hintonia Lumaeana* Bullock in Hook. Icon. *pl. 3295*, p. 5. 1935.—In the Herbarium of Field Museum is a photograph of the type of this rare species (Neg. No. 37197), from the Paris herbarium. The specimen, according to the label, was sent to Baillon by George Luma, from Guatemala, where it was cultivated at San Jorge, Dept. Chimaltenango, at an elevation of 900 meters. The plant has been collected but few times. Bullock (loc. cit.) reports *Donnell Smith* 2757 from Dept. Guatemala. One Mexican specimen has been examined, possibly but not necessarily taken from a cultivated plant: Environs d'Orizaba, *Botteri & Sumichrast* 172. There is now available a new

collection, from a wild tree, that indicates at least one locality at which the species is truly indigenous: Guatemala: Dept. Quezaltenango, edge of barranco along Río Quenené, road between Finca Pireneos and Calahuaché, alt. 1,200–1,300 meters, January 27, 1940, *Steyermark* 35017; a tree of 7.5 meters; leaves membranaceous, dull green above, paler beneath; flowers sweet-scented, the corolla greenish white outside, bright white inside; anthers pale yellow. The tree is a handsome and showy one because of its very large and beautifully colored flowers.

Deppea amaranthina Standl. & Steyerm., sp. nov.—Frutex ramosus, ramis subangulatis gracilibus ochraceis, internodiis brevibus, novellis dense hirtello-villosulis; stipulae parvae deciduae; folia majuscula petiolata membranacea, petiolo gracili 1–3.5 cm. longo saepe rubescente dense hirtello-villosulo; lamina rotundo-ovata vel late rhombeo-ovata, interdum fere orbicularis, 7–11.5 cm. longa 4–8.5 cm. lata, apice rotundata vel obtusa, basi rotundata usque late cuneata, subito contracta atque cuneato-decurrens, supra viridis sparse brevissimeque villosula, costa nervisque non elevatis, subtus pallidior, densiuscule villosula, costa tenera prominente, nervis lateralibus utroque latere ca. 7 teneris angulo lato adscendentibus arcuatis prope marginem arcuato-conjunctis rubescentibus, venis prominulis laxe reticulatis; flores cymoso-paniculati, paniculis laxe paucifloris usque 4 cm. longis plerumque petiolis brevioribus, ramis gracilibus sparse puberulis, pedicellis gracilibus plerumque 3–6 mm. longis; sepala ad apicem capsulae persistentia lineari-subulata 2 mm. longa reflexa; capsula ovalis ca. 5 mm. longa et 3 mm. lata basi obtusa leviter bisulcata sparse puberula vel fere glabra obscure nervoso-costata; semina minuta brunnea.—Guatemala: Rocky, wooded slopes along river, Dept. Chiquimula, Cerro Brujo, in vicinity of Río Negro, below Montaña Montenegro, near village of Brujo, alt. 1,500–2,000 meters, November 1, 1939, *Julian A. Steyermark* 30926 (type in Herb. Field Mus.).

Local name, Conte. The Guatemalan species is allied with *Deppea pubescens* Hemsl., of southern Mexico. That has much more abundant pubescence, smaller and narrower, mostly acute leaves, much longer inflorescences, and deltoid sepals. The leaves of the present plant suggest those of some species of *Amaranthus*, by their shape and coloring, hence the specific name.

Exostema mexicanum Gray, Proc. Amer. Acad. 5: 180. 1861.—Described originally from Veracruz, this species has been collected also in San Luis Potosí, Campeche, Yucatán, Chiapas, and British

Honduras. It is now found to extend into Guatemala, and one collection from Salvador, previously referred with doubt to *E. indutum* Standl., probably is conspecific. The following collections are worthy of citation: Guatemala: Dept. Izabal, Río Dulce, between Livingston and 6 miles up river, on north side (right-hand side going up river), at sea level, *Steyermark* 39429; a tree; leaves firmly membranaceous, dull, rich green above, pale grass-green beneath.—Salvador: San Marcos Lempa, *Calderón* 2160; a tree, the local name Quina.—Mexico: Without locality, *Sessé & Mociño* 1603, 5476. The second Sessé and Mociño collection was labeled as a new species of *Psychotria.*

Faramea brachysiphon Standl. Field Mus. Bot. 8: 62. 1930.—The type is *Schipp* 345 from Middlesex, British Honduras. Three new collections are at hand, one from Guatemala. British Honduras: Middlesex, Stann Creek District, in high ridge on hilltop, *Percy H. Gentle* 2914; a treelet; flowers light blue.—Guatemala: Dept. Izabal, between Virginia and Lago de Izabal, Montaña del Mico, alt. 50–500 meters, April, 1940, *Steyermark* 38877, 38843; a shrub or small tree; leaves chartaceous, dull green on both sides, concolorous except for the pale green midrib beneath; calyx purplish blue; corolla bluish lilac; anthers yellow-buff; fruit globose, dull green.

Genipa vulcanicola Standl. Bot. Ser. Field Mus. 17: 213. 1937.—The type was collected by Skutch on the Volcán de Atitlán, Guatemala, in 1934. Recent collections indicate that the tree has a rather wide range: Guatemala: Dept. Quezaltenango, slopes of Volcán de Zunil, near Aguas Amargas, alt. 2,430–2,850 meters, moist forest, *Standley* 65405. Dept. Quezaltenango, damp, dense forest, Los Positos, southwest of San Martín Chile Verde, alt. 1,500 meters, *Standley* 67918; a tree of 4.5–7.5 meters, common. Dept. Quezaltenango, near Santa María de Jesús, alt. 1,400 meters, *Steyermark* 34411; a tree of 9 meters; leaves subcoriaceous, rich, dark green above, grass-green beneath.—Mexico: Without locality, December, 1936, *Matuda* 433. Siltepec, *Matuda* 1633. Mt. Ovando, Chiapas, *Matuda* 2081. Mt. Pasitar, Chiapas, *Matuda* S-218. The fruit of the tree has not yet been collected.

Geophila trichogyne (Muell. Arg.) Standl. Field Mus. Bot. 7: 423. 1931. *Mapouria trichogyne* Muell. Arg. in Mart. Fl. Bras. 6, pt. 5: 426. 1881.—Several South American plants extend into northern Central America but are not found in intervening regions of Central America where they might well be expected. Of this group the present species is an example. It occurs in the Amazon Valley of Brazil and eastern Peru, as well as in Venezuela. Already it has

been recorded from British Honduras, and two recent collections have been made in northern Guatemala: Dept. Izabal: Near Entre Ríos, alt. 18 meters, wet forest, *Standley* 72766; a creeping herb, the corolla white. Between Virginia and Lago de Izabal, Montaña del Mico, alt. 50–500 meters, *Steyermark* 38855; creeping on forest floor, forming colonies; leaves soft and membranaceous, dull green above, pale gray-green beneath.

Gonzalagunia chiapasensis (Standl.) Standl. & Steyerm., comb. nov. *Rondeletia chiapasensis* Standl. Bot. Ser. Field Mus. 22: 54. 1940.—The type is *Matuda* 1064 from Cascarada, Chiapas, represented in the Herbarium of Field Museum only by a fragment. No fruits were available when the description was drawn up, and when in flower some species of *Rondeletia* with elongate, spiciform panicles are confusingly like the common species of *Gonzalagunia*. Recent additional collections of the same plant show that it is a *Gonzalagunia*, and a quite distinct species in that genus. Besides the type, the following Guatemalan collections are at hand: Dept. Quezaltenango: In second-growth thickets, Volcán de Zunil, alt. 1,620 meters, *Skutch* 922; a shrub 4.5 meters high; flowers white, the outside of the corolla tube strongly tinged with rose; berries white.—Dept. San Marcos: Along Quebrada Tierra María, between Tajumulco and Tecutla, Volcán de Tajumulco, alt. 1,800–2,500 meters, *Steyermark* 36851; a shrub or tree as much as 6 meters tall; leaves dull green above, light grayish yellow-green beneath; fruit green, turning white, soft, spherical; corolla tube rose, the lobes white. Between Canjulá and La Unión Juárez, Volcán de Tacaná, alt. 2,000–3,000 meters, *Steyermark* 36475. The Skutch collection, the first one made of the species, was assigned a name as a new species of *Gonzalagunia* by the senior author, but unfortunately was not published before the description based on the Matuda collection.

Hoffmannia chiapensis Standl. Contr. U. S. Nat. Herb. 20: 206. 1919.—The type was collected on Cerro del Boquerón, Chiapas, Mexico, and the species has been reported also from Oaxaca (see N. Amer. Fl. 32: 207. 1934). Numerous additional collections have been made recently, and the plant extends into Guatemala: Mexico: Volcán de Tacaná, Chiapas, alt. 1,000–2,000 meters, *Matuda* 2450. Chiquihuite, Volcán de Tacaná, alt. 2,800 meters, *Matuda* 2828.—Guatemala: Dept. San Marcos: Between Canjulá and La Unión Juárez, Volcán de Tacaná, alt. 2,000–3,000 meters, *Steyermark* 36399; a shrub of 3 meters; leaves membranaceous, dark green above, paler beneath; stems olive-green; fruit purple-black. Between Todos

Santos and Finca El Porvenir, Volcán de Tajumulco, alt. 1,300–3,000 meters, *Steyermark* 36991, 37032; a shrub or tree of 2.5–6 meters; corolla greenish; fruit purplish red or dull rose-red. Finca Vergel, near Rodeo, alt. 900 meters, wet forest, *Standley* 68902, 68970, 68911. —Dept. Quezaltenango: Fuentes Georginas, western slope of Volcán de Zunil, alt. 2,850 meters, wet forest, *Standley* 67495, 67487, 67510, 67351; a shrub of 1.5–4.5 meters, the corolla pale greenish yellow. Damp forest, Chiquihuite, alt. 1,410 meters, *Standley* 68115; a shrub of 1.5 meters, the stems simple.

Hoffmannia confertiflora Standl. Contr. U. S. Nat. Herb. 20: 206. 1919.—A new Guatemalan collection has been made of this species, known previously only from the type, collected at San Miguel Uspantán, Dept. Quiché, at 2,100 meters: Dept. San Marcos, between La Vega ridge along Río Vega and northeast slopes of Volcán de Tacaná, to 3 miles from Guatemala-Mexico boundary, vicinity of San Rafael, alt. 2,500–3,000 meters, *Steyermark* 36189; a shrub of 3 meters; flowers white; leaves membranaceous, dark green above, dull green beneath, the lateral nerves conspicuous; fruit ovoid, dull reddish.

Hoffmannia gesnerioides (Oerst.) Kuntze, Rev. Gen. 285. 1891. *Ophryococcus gesnerioides* Oerst. Vid. Medd. 1852: 53. 1852. —When the account of the genus *Hoffmannia* was published in *North American Flora* (32: 203. 1934), the species was known only from the original collection, from Monte Pantasmo, Segovia, Nicaragua, obtained by Oersted in January, 1848. A duplicate of the type is in the Herbarium of Field Museum, where there is also a photograph (Neg. 22814) of the Copenhagen specimen. Two recent collections agree with the type, and show that the species has a rather wide range, especially for this genus: Honduras: Dept. Comayagua, forest floor near El Rincón, about 10 miles west of Siguatepeque, alt. 1,400–1,500 meters, *Yuncker, Dawson & Youse* 6058; a sprawling shrub; fruit scarlet, few-seeded.—Guatemala: Dept. Chiquimula, Cerro Tixixí, 3–5 miles north of Jocotán, alt. 500–1,500 meters, shaded slopes of ravine in cloud forest near the top, *Steyermark* 31611; suffrutescent; fruit globose, dull purplish rose; leaves firmly membranaceous, dark green above, pale beneath.

Hoffmannia macrosiphon Standl. Bot. Ser. Field Mus. 17: 276. 1937.—The original material was collected in Guatemala on Volcán de Zunil, Dept. Quezaltenango, the exact locality not indicated, *Skutch* 937. Recent exploration in the same country has yielded a number of new collections: Dept. San Marcos: Barranco

Eminencia, above San Rafael Pie de la Cuesta, alt. 2,100–2,400 meters, *Standley* 68666, 68683; growing in wet forest; a shrub of 1.5 meters; corolla pale red. Trail between Finca El Porvenir and San Sebastián, halfway up slopes in moist forest, alt. 1,300–4,000 meters, *Steyermark* 37059; a woody vine; fruit cylindric, pale green; leaves dark green above, pale green beneath; corolla tube and lobes dull yellow, the margins of the lobes reddish; anthers whitish. Between Todos Santos and Finca El Porvenir, lower to middle slopes of Volcán de Tajumulco, alt. 1,300–3,000 meters, *Steyermark* 36982, 36966; a shrub of 2.5–4.5 meters; fruit oblong or sometimes becoming spherical, pale green, turning deep red.

Mitchella repens L. Sp. Pl. 111. 1753.—One of the least expected plants discovered recently in Guatemala is the partridge berry. Although this plant ranges widely in temperate North America, there is, so far as the writers know, only one authentic record for it in Mexico, a specimen collected by Ehrenberg (No. 1191) in December, 1839, at Cuesta de Pinoles. Data for the Guatemalan collection are as follows: Dept. Zacapa, pine forest, Sierra de las Minas, near summit of ridge, below Finca Alejandria, alt. 2,000 meters, October, 1939, *Steyermark* 29769. Careful comparison with United States material shows no definite differences, except that the leaves are somewhat larger than those of most northern specimens, and inclined to be pointed. No corollas were found with the Guatemalan plants, and these might supply some distinguishing character.

Pentagonia Donnell-Smithii Standl. Journ. Wash. Acad. Sci. 17: 170. 1927. *Watsonamra Donnell-Smithii* Standl. Contr. U. S. Nat. Herb. 17: 442. 1914.—In *North American Flora* (32: 142. 1921) this shrub or tree was reported only from the original locality, near La Emilia, Llanuras de Santa Clara, Costa Rica. It has, however, been reported more recently from much farther north in Central America, and is common along the Atlantic coast of Honduras. Thus far a single record is known for Guatemala: Dept. Izabal, Río Juyamá, southeast of Cheyenne, about 15 miles southwest of Bananera, alt. 50–100 meters, *Steyermark* 39156; a tree of 9 meters; leaves coriaceous, dark green above, pale green beneath; flower buds pale green. Probably this species can not be maintained as distinct from *P. macrophylla* Benth. of Panama.

Psychotria Purpusii Standl. Contr. U. S. Nat. Herb. 23: 1388. 1926.—Previously only the type has been known, *Purpus* 7012 from Cerro del Boquerón, Chiapas, Mexico. The species is a somewhat isolated one, with inflorescences that are unusually handsome for

this genus. It is now known to extend into the Occidente of Guatemala: Dept. San Marcos: Between Todos Santos and Finca El Porvenir, lower to middle slopes of Volcán de Tajumulco, alt. 1,300–3,000 meters, *Steyermark* 36980; a shrub of 2.5–3.5 meters; corolla white, thickish; stigma white; anthers purplish; bracts orange and green. Between town of Tajumulco and Tecutla, northwestern slopes of Volcán de Tajumulco, alt. 1,800–2,500 meters, high forest near top of barranco, *Steyermark* 36809; a tree of 6 meters; leaves soft, membranaceous, dark green above, pale green beneath; bracts yellow, with green veins; fruit white, with mustard-yellow hairs near the tip; peduncle mustard-yellow, nodding.

Rondeletia Deamii (Donn. Smith) Standl. N. Amer. Fl. 32: 60. 1918. *Bouvardia Deamii* Donn. Smith, Bot. Gaz. 49: 455. 1910.—In *North American Flora* (loc. cit.) this shrub is reported only from Oaxaca and Guatemala, but it has since been collected in Salvador, and reported from that country. The type is from Fiscal, Dept. Guatemala, Guatemala, and several recent collections have been made there and elsewhere in that country: Dept. Guatemala: Concuá Bridge over Río Motagua, alt. 300 meters, in thicket by the river, *Standley* 59322, 59317; a slender shrub or a small tree. Near Fiscal, alt. 1,100 meters, dry, rocky thicket, *Standley* 59592; a shrub 1.5 meters high.—Dept. Chiquimula: Along stream in cañada, Caracol Mountain, 1.5 miles north of Quezaltepeque, alt. 1,200–1,400 meters, *Steyermark* 31400; a shrub of 1.5 meters, the leaves membranaceous.

Rondeletia izabalensis Standl. & Steyerm., sp. nov.—Arbor 4.5–6 m. alta, ramis gracilibus fusco-ochraceis vel brunnescentibus teretibus sparse strigosis, internodiis brevibus vel elongatis; stipulae foliaceae subreniformes ca. 1 cm. longae et paullo latiores apice late rotundatae basi profunde cordatae glabratae; folia majuscula breviter petiolata firme membranacea, petiolo crasso 6–15 mm. longo strigilloso; lamina variabilis, oblanceolato-oblonga usque oblongo-obovata vel elliptico-lanceolata, plus minusve asymmetrica, 11–23 cm. longa 5–9.5 cm. lata acuta ad subabrupte longiacuminata, basi cuneata vel longe angusteque attenuata, basi ipsa interdum subobtusa, supra in sicco fuscescens vel brunnescens glabra, costa nervisque manifestis sed non elevatis, subtus paullo pallidior pilis minutis adpressis sat dense conspersa, costa tenera prominente, nervis lateralibus utroque latere ca. 9 obliquis teneris angulo semirecto vel angustiore adscendentibus leviter arcuatis prope marginem arcuato-junctis, venis fere obsoletis; inflorescentia terminalis 7–9 cm. longe pedunculata erecta cymoso-corymbosa ca. 5 cm. longa et 7 cm.

lata dense multiflora, bracteis basalibus foliaceis, superioribus lineari-attenuatis 3–10 mm. longis, ramis gracilibus dense sericeo-strigillosis, floribus dense aggregatis sessilibus; hypanthium subglobosum 1 mm. longum dense pilis ochraceis longiusculis adpresso-pilosum; calyx vix ultra 1 mm. longus adpresso-pilosus 4-lobus, lobis ovatis obtusis vel acutis inaequalibus; corolla alba extus dense subadpresso-pilosa, tubo gracili 5–6 mm. longo sursum vix dilatato, fauce non barbato, lobis 4 patentibus subrotundatis 1.5–2 mm. longis intus glabris.—Guatemala: Wet forest, Escoba, across the bay from Puerto Barrios, Dept. Izabal, near sea level, May 3, 1939, *Paul C. Standley* 72891 (type in Herb. Field Mus.), 72976. Chichoob, Chamá, Dept. Alta Verapaz, alt. 300 meters, June 8, 1920, *Harry Johnson* 197. Dept. Izabal, between Escobas and Montaña Escobas, across the bay from Puerto Barrios, alt. 1–100 meters, along stream, *Steyermark* 39303, 39304; leaves firmly chartaceous, rich green above, paler green beneath.

Some of these collections were determined as *Rondeletia linguiformis* Hemsl., but the material here cited under that species has shown that the determinations were erroneous. The present plant differs from *R. linguiformis* in its broad, cordate stipules, smaller corollas, and pubescent lower leaf surface. Also, in that species the calyx lobes are broadest at the apex, rather than at the base.

Rondeletia Jurgensenii Hemsl. Diag. Pl. Mex. 2: 29. 1879; Bullock in Hook. Icon. *pl. 3322*. 1936. *Deppea macrocarpa* Standl. Field Mus. Bot. 4: 268. 1929. *D. stenosepala* Standl. Field Mus. Bot. 8: 161. 1930.—Determination of a recent Guatemalan collection has made it evident that the three names listed above refer to a single species. The following material of *Rondeletia Jurgensenii* may be reported, in addition to type material collected in Mexico by Jurgensen, and certain Hinton specimens cited by Bullock (loc. cit.). Mexico: Nayarit: Cerro de San Juan, west of Tepic, alt. 1,000 meters, *Mexia* 727 (type of *Deppea macrocarpa*); a shrub of 60–120 cm., called Pie de pájaro.—Oaxaca: Tlajiaco a Chicahuaitla, *Galeotti* 2685 (type of *Deppea stenosepala*).—Guatemala: Dept. Quezaltenango, oak woods, Volcán de Santa María, between Santa María de Jesús and Las Mojadas, alt. 1,500–3,000 meters, *Steyermark* 33961; a shrub of 4.5 meters; leaves membranaceous, dull green. The species is new for the Guatemalan flora.

Rondeletia linguiformis Hemsl. Diag. Pl. Nov. 29. 1879.—The species is a rare one, known only from Guatemala. The following collections agree exactly with the original collection,

obtained by Skinner, quite possibly in the same region: Guatemala: Dept. Izabal, between Milla 49.5 and ridge 6 miles from Izabal, Montaña del Mico, alt. 65–600 meters, April, 1940, *Steyermark* 38546, 38551. A shrub 3–4.5 meters tall, common on forested slopes beneath pines; corolla white; leaves firmly subcoriaceous, rich green above, paler, dull green beneath; flowers sweet-scented.

Rondeletia myriantha Standl. & Steyerm., sp. nov.—Frutex vel arbuscula 3.5 m. alta vel ultra, ramis gracillimis teretibus ferrugineis glabratis rimosis sparse lenticellatis, novellis puberulis vel interdum primo tomentosis, internodiis brevibus vel elongatis; stipulae persistentes anguste lanceolato-triangulares attenuatae strigosae; folia modica breviter petiolata membranacea, petiolo gracili 7–15 mm. longo adpresso-pilosulo; lamina lanceolato-oblonga 6.5–15.5 cm. longa 3.5–5 cm. lata longe angusteque attenuato-acuminata, basi acuta vel obtusa, supra viridis, glabra vel tantum ad nervos pilosula, nervis venisque prominulis, subtus paullo pallidior primo laxe sparseque arachnoideo-tomentulosa, cito glabrata, in statu adulto fere omnino glabra, costa tenera prominente, nervis lateralibus utroque latere ca. 7 teneris obliquis angulo semirecto vel latiore adscendentibus arcuatis, venis fere omnibus transversis remotis parallelis prominulis; inflorescentia terminalis erecta anguste elongato-thyrsoidea et fere spiciformis 1–3.5 cm. longe pedunculata ca. 8 cm. longa atque 2.5 cm. lata laxe multiflora, floribus sessilibus vel brevissime pedicellatis in cymulas parvas dense paucifloras breviter pedunculatas aggregatis; bracteae infimae interdum foliosae sed parvae, superioribus linearibus viridibus brevibus inconspicuis; hypanthium fere 1 mm. longum subglobosum dense albo-tomentosum; calyx 4-dentatus, dentibus vix ad 1 mm. longis inaequalibus virescentibus extus glabratis ovalibus et obtusissimis usque triangularibus et acutis; corolla alba parva extus subsparse adpresso-pilosula, tubo gracili 5 mm. longo tereti sursum vix dilatato, lobis 4 orbicularibus 1.5 mm. longis, intus glabris, fauce non barbato; stamina inclusa, stylo breviter exserto; capsula subglobosa costata glabrata 2.5–3 mm. longa.—Guatemala: Dept. Suchitepéquez, bushy slopes and banks, Finca Moca, alt. 960 meters, October 31, 1934, *Alexander F. Skutch* 1569 (type in Herb. Field Mus.; dupl. in Herb. Arnold Arboretum). Dept. Quezaltenango, damp forest, Finca Azucena, above Colomba, alt. 1,320 meters, March, 1939, *Standley* 68087. Dept. Suchitepéquez, southwestern lower slopes of Volcan de Zunil, between Finca Montecristo and Finca Asturias, alt. 1,200–1,300 meters, *Steyermark* 35286; a shrub or small tree of 4.5–6 meters. Dept. San

Marcos, above Finca El Porvenir, on Todos Santos Chiquitos, lower slopes of Volcán de Tajumulco, alt. 1,300–1,500 meters, *Steyermark* 37096; a tree of 7.5–9 meters.

A relative of *R. secundiflora* Robinson, also Guatemalan, which differs in its smaller stipules, appressed-pilosulous leaves, hirsute hypanthium, longer calyx lobes, and somewhat larger corolla.

Rondeletia rufescens Robinson, Proc. Amer. Acad. 45: 402. 1910.—The type is from Cobán, Alta Verapaz, Guatemala, and heretofore the species has been unknown outside that department. It has been re-collected there recently, and found also in the rather distant Department of Chiquimula. Guatemala: Near Tactic, Alta Verapaz, alt. 1,500 meters, wet forest, *Standley* 70501; a shrub of 2.5 meters; corolla pale pink. Near San José, southeast of Tactic, Alta Verapaz, alt. 1,500 meters, wet thicket, *Standley* 69652; a shrub of 3 meters; corolla reddish pink. Dept. Chiquimula, middle slopes of Montaña Norte to El Jutal, on Cerro Brujo, southeast of Concepción de las Minas, alt. 1,700–2,000 meters, in mixed forest below the cloud forest, *Steyermark* 31069; a shrub of 3 meters; leaves soft, dark, dull green above, gray-green beneath; inflorescence (immature) purplish red. The shrub is a pretty one because of the abundance of beautifully colored, raceme-like panicles.

Rondeletia septicidalis Robinson, Proc. Amer. Acad. 45: 403. 1910.—When the account of the genus *Rondeletia* was published in *North American Flora* (32: 55. 1918) a single collection was known, from Chicharras, Chiapas, Mexico. Two additional collections are now at hand: Mexico: Volcán de Tacaná, Chiapas, north slope, alt. 2,100 meters, April, 1939, *Matuda* 2965.—Guatemala: Dept. San Marcos, above Finca El Porvenir, between Todos Santos Chiquitos and Loma de la Paloma, south-facing slopes of Volcán de Tajumulco, alt. 1,400–1,700 meters, March, 1940, *Steyermark* 37254; a shrub or small tree of 4.5–6 meters; leaves membranaceous, dark green above, paler green beneath; inflorescence drooping. The very slender and interrupted inflorescences are as much as 32 cm. long.

Rondeletia Skutchii Standl. & Steyerm., sp. nov.—Frutex 4.5 m. altus, ramis gracilibus teretibus, vetustioribus fuscescentibus vel ochraceis, junioribus ferrugineis primo dense laxeque tomentosis, cito glabratis; stipulae persistentes e basi triangulari-lanceolata anguste subulato-attenuatae ca. 7 mm. longae tomentosae vel glabratae; folia modica breviter petiolata membranacea, petiolo gracili 1–1.5 cm. longo laxe tomentoso vel glabrato; lamina anguste lanceo-

lato-oblonga usque rhombico-elliptica vel oblongo-elliptica 10–15.5 cm. longa 3–6.5 cm. lata longissime angusteque attenuato-acuminata vel interdum acuminata, basi interdum obliqua acuta, supra viridis, primo sparse laxeque tomentosa, cito glabra, subtus pallidior rufescenti-canescens subdense et laxissime tomentosa, costa tenera prominente, nervis lateralibus utroque latere ca. 11 tenerrimis arcuatis angulo semirecto vel saepius latiore adscendentibus, venis prominulis laxe reticulatis; inflorescentia reflexa et pendula anguste thyrsoidea et spiciformis sublaxe multiflora breviter pedunculata 7–14 cm. longa et ca. 3.5 cm. lata, rhachi dense tomentosa, floribus in cymulas dense paucifloras sessiles vel breviter pedunculatas congestis, bracteis omnibus inconspicuis linearibus; hypanthium subglobosum basi obtusum dense albo-tomentosum; calyx 4-lobus intus glaber extus sparse tomentosus, lobis anguste lanceolato-triangularibus longe attenuatis ca. 2 mm. longis; corolla extus floccoso-tomentosa, tubo gracili 10–12 mm. longo gracili superne vix dilatato, lobis 4 patentibus rotundatis 3.5–4 mm. longis apice rotundatis patentibus intus glabris, fauce glabro; stamina inclusa, stylo tubum corollae aequante. —Guatemala: Dept. Suchitepéquez, on forested ridge, Finca Moca, alt. 1,260 meters, January 10, 1935, *Alexander F. Skutch* 2110 (type in Herb. Field Mus.; duplicate in Herb. Arnold Arboretum).

The corollas are described as dull red. The plant belongs to the group *Laniflorae* (see N. Amer. Fl. 32: 46. 1918). Superficially it much resembles the recently described *Rondeletia tacanensis* Lundell, of Volcán de Tacaná, Chiapas, Mexico, particularly in its reflexed or pendent inflorescence. In that species the corolla is much larger, and the slender, conspicuous calyx lobes measure as much as 7 mm. in length.

Rondeletia stachyoidea Donn. Smith, Bot. Gaz. 43: 298. 1906. —In *North American Flora* (32: 58. 1918) the range of this species is given as Guatemala to Costa Rica, but this has been found erroneous. The material on which the Costa Rican record was based is *Rondeletia Brenesii* Standl. (Bot. Ser. Field Mus. 18: 1370. 1938). *R. stachyoidea* was described from Semicoch, Alta Verapaz, Guatemala. It occurs in Guatemala also in the Department of Izabal, and has been found along the Atlantic coast of Honduras and in British Honduras. Recently it has been collected in Mexico: Juárez, Tenosique, Tabasco, in advanced forest, June, 1939, *E. Matuda* 3392; a shrub of 3 meters.

Rondeletia suffrutescens Brandeg. Univ. Calif. Publ. Bot. 6: 70. 1914.—When the account of the genus *Rondeletia* was published

in *North American Flora* (32: 49. 1918) only the original collection of this species was known, *Purpus* 6704 from Cerro del Boquerón, Chiapas, Mexico. Several additional collections have been made during the past few years: Mexico: Siltepec, Chiapas, *Matuda* 1675.—Guatemala: Dept. Quezaltenango, rich woodland, Volcán de Zunil, alt. 1,710 meters, *Skutch* 889; a shrub to 1.5 meters in height; flowers pale yellow. Dept. San Marcos, between Todos Santos and Finca El Porvenir, lower to middle slopes of Volcán de Tajumulco, alt. 1,300–3,000 meters, March, 1940, *Steyermark* 37018; a woody vine; leaves thin, grass-green above, paler beneath. Dept. San Marcos, slopes of barrancos tributary to and bordering Río Vega, between San Rafael and Guatemala-Mexico border, alt. 2,500–3,000 meters, *Steyermark* 36342; in ravine thickets around boundary line; an herb of 60–90 cm.; corolla tube green outside, the lobes dull yellow, thickish, fleshy, spotted with purplish; flowers with the odor of sulphur dioxide. Dept. Quezaltenango, along Quebrada de San Gerónimo, Finca Pireneos, lower slopes of Volcán de Santa María, alt. 1,300–2,000 meters, in forest, *Steyermark* 33367; a vine, the leaves membranaceous, dull green. The last specimen is in fruit, the capsules being about 7 mm. long, glabrous, costate and nerved, bearing at the apex the long and narrow, green, reflexed calyx lobes.

Rondeletia tacanensis Lundell, Bull. Torrey Club 66: 603. 1939.—An apparently well marked species and a handsome plant, recently described from the western slopes of the Volcán de Tacaná, Chiapas, Mexico, at 2,800 meters. The species extends into adjacent Guatemala: Dept. San Marcos: Trail between Finca El Porvenir and San Sebastián, Volcán de Tajumulco, upper forest below the *Abies* zone, March, 1940, *Steyermark* 37066; a tree of 9–12 meters; panicles recurved; corolla tube dark red, the lobes spreading, very dark, rich, blood-red in bud; calyx pale green; leaves rugose, firmly membranaceous, dark green above, paler green beneath. Between La Vega ridge along Río Vega and northeast slopes of Volcán de Tacaná, vicinity of San Rafael, alt. 2,500–3,000 meters, *Steyermark* 36209; a tree of 7.5 meters; flowers dark, dull red.

Rondeletia vulcanicola Standl. & Steyerm., sp. nov.—Frutex vel arbuscula 1.5–6 m. alta, ramis gracillimis ochraceis vel brunnescentibus teretibus, novellis densissime albido-strigosis, internodiis brevibus vel elongatis; stipulae persistentes erectae e basi brevi triangulari subulatae ca. 2.5 mm. longae; folia inter minora petiolata tenuiter membranacea, petiolo gracili 5–12 mm. longo dense strigoso; lamina ovato-lanceolata usque anguste elliptico-

lanceolata prope medium vel paullo inferius latissima, apice anguste longiattenuata et saepe subfalcata, basin versus breviter angustata, basi ipsa acuta vel acuminata, supra in sicco fuscescenti-olivacea densiuscule adpresso-pilosa, subtus fere concolor, sparse vel subdense adpresso-pilosa, pilis tenerrimis pallidis, in omnibus axillis nervorum venarumque densius barbata, costa tenera prominente, nervis lateralibus utroque latere ca. 11 tenerrimis subarcuatis obliquis, venis paucis inconspicuisque; inflorescentia terminalis paniculata longipedunculata, angusta et fere spiciformis, usque 8 cm. longa sed saepius multo brevior, rhachi gracili viridi pilis adscendentibus dense pilosa, ramis lateralibus brevibus vel saepius nullis, floribus in glomerulos parvos cymoso-aggregatis, sessilibus vel brevissime pedicellatis; bracteae parvae inconspicuae; hypanthium 1 mm. longum dense pilis longiusculis pallidis hirtellum; calycis lobi 4 inaequales lineares vel lanceolati 1–2 mm. longi hispiduli; corolla in sicco fusco-purpurea extus dense pilis brevibus adpressis pallidis strigosa, tubo gracili vix ad 6 mm. longo, lobis suborbicularibus 1.5 mm. longis intus glabris, fauce non barbato; capsula didymo-globosa ca. 4 mm. lata et 3 mm. alta dense pilis brevibus subadpressis hispidula; semina numerosa pallide lutescentia obtuse angulata grosse punctata.—Guatemala: Dept. Quezaltenango: Finca Pireneos, lower, south-facing slopes of Volcán de Santa María, between Santa María de Jesús and Calahuaché, alt. 1,300–1,500 meters, December 31, 1939, *Julian A. Steyermark* 33220 (type in Herb. Field Mus.); January 8, 1940, *Steyermark* 33801; leaves thin, grass-green above, pale green beneath, with prominent, light-colored nerves.—Dept. Sacatepéquez: Moist forest, near Las Lajas, alt. 1,200 meters, November, 1938, *Standley* 58105.—Dept. Escuintla: Wet forest, Río Guacalate, alt. 600 meters, December, 1938, *Standley* 60201. Escuintla (probably from the same locality as the preceding collection), *J. R. Johnston* 1362.

The shrub is closely—perhaps too closely—related to the Mexican *Rondeletia Liebmannii* Standl. In that the corollas are slightly larger, and the pubescence of the leaves is decidedly different in character, consisting of soft, spreading hairs rather than of closely appressed ones.

Rondeletia Zolleriana Standl. & Steyerm., sp. nov.—Frutex 1.5–2.5 m. altus ramosus, ramis gracillimis teretibus subferrugineis, internodiis elongatis sparse primo strigillosis, in statu adulto fere omnino glabris; stipulae persistentes 2.5–3 mm. longae e basi lata subulato-acuminatae strigillosae; folia parva petiolata mem-

branacea, petiolo gracili 5–13 mm. longo strigilloso; lamina elliptica vel elliptico-ovata 5–10 cm. longa 2.5–5.5 cm. lata subito angusteque longiacuminata, basi acuta vel obtusa et saepius abrupte breviter contracta, supra viridis pilis paucis hinc inde conspersis villosa vel fere omnino glabra, costa nervisque prominulis inconspicuis, subtus paullo pallidior ad costam nervosque sparse subadpresso-hirtella, in axillis saepe barbata, costa tenera prominente, nervis lateralibus utroque latere 5–6 tenerrimis subarcuatis angulo lato adscendentibus, venis obscuris laxe reticulatis; inflorescentia terminalis, sessilis atque e basi triradiata et foliaceo-bracteata vel interdum usque 3.5 cm. longe pedunculata, cymoso-paniculata pauciflora, usque 5 cm. lata, laxa, floribus plerumque in cymulas trifloras dispositis, pedicellis usque 7 mm. longis sed saepe multo brevioribus dense strigosis, bracteis elongatis foliaceis linearibus vel lineari-lanceolatis; hypanthium ovale 2–2.5 mm. longum dense albido-strigosum; calyx 4-partitus, extus sparse strigosus, segmentis maxime inaequalibus, uno majore lanceolato 10 mm. longo 3 mm. lato acuminato 3-nervio, aliis 3 quoque inaequalibus fere linearibus vel subulatis plerumque 5–7 mm. longis; corolla ochroleuca extus dense albido-strigosa, tubo 5–7 mm. longo sursum valde sensimque dilatato apice ca. 3 mm. lato, fauce non barbato, lobis suborbicularibus fere 3 mm. longis apice late rotundatis intus glabris, extus basi hispidulis, superne sparse puberulis vel fere glabris.—Guatemala: Dept. San Marcos, common on slopes between Finca El Porvenir and Loma Corona, 9 miles northwest of El Porvenir, southwest-facing slopes of Volcán de Tajumulco, alt. 1,300–2,000 meters, March 14, 1940, *Julian A. Steyermark* 37738 (type in Herb. Field Mus.). Between Todos Santos and Finca El Porvenir, slopes of Volcán de Tajumulco, alt. 1,300–3,000 meters, March 1, 1940, *Steyermark* 37016; a vine or shrub up to 3 meters tall; flowers white; leaves thin, membranaceous, grass-green above, paler beneath.

Leaves thin, dull green above and shining, pale green beneath; flowers creamy yellow. The plant is related to *Rondeletia aethiocalymna* Donn. Sm., of Alta Verapaz, Guatemala, but in that the much larger leaves are glabrous, and the largest calyx lobe is obtuse or rounded at the apex.

The species is named for Mr. Erich Zoller, manager of Finca El Porvenir, who furnished the junior author with abundant facilities for his work on the Volcán de Tajumulco. He was greatly interested in the botanical exploration of this area, and his kindliness and thoughtfulness contributed largely to the success of the collecting upon this, the highest volcano of Guatemala, and of Central America.

Sommera chiapensis Brandeg. Univ. Calif. Publ. Bot. 6: 196. 1915.—Heretofore the species has been known only from the type, collected at Finca Irlanda, Chiapas, Mexico, by Purpus. It occurs also in western Guatemala: Dept. San Marcos: Above Finca El Porvenir on Todos Santos Chiquitos, lower south-facing slopes of Volcán de Tajumulco, alt. 1,300–1,500 meters, along stream, March, 1940, *Steyermark* 37205; a tree of 9–12 meters; leaves firmly membranaceous, dark forest-green above, paler dull green beneath; corolla white. Above Finca El Porvenir, up Loma Bandera Shac, lower south-facing slopes of Volcán de Tajumulco, along quebrada, alt. 1,300–1,500 meters, *Steyermark* 37441; a tree of 9 meters.

CAPRIFOLIACEAE

Viburnum jucundum Morton, Contr. U. S. Nat. Herb. 26: 355. 1933.—The type was collected somewhere in Chiapas, Mexico, *Ghiesbreght* 729. Several specimens from Guatemala, one determined by Mr. Morton, indicate an extension of range into the latter country: Dept. Quezaltenango: Mountains southeast of Palestina, damp, dense forest, alt. 2,700 meters, *Standley* 66339; a tree of 6 meters.—Dept. San Marcos: Upper, south-facing, forested slopes of Volcán de Tajumulco, between Las Canojas and top of ridge, 7 miles from San Sebastián, alt. 3,300–3,900 meters, *Steyermark* 35868; a tree of 9 meters; leaves soft, rich, light grass-green above, gray-green beneath; fruits green, turning dull blue-black. Along Quebrada Canjulá, between Sibinal and Canjulá, Volcán de Tacaná, alt. 2,200–2,500 meters, *Steyermark* 36034; a tree of 7.5–9 meters; fruit brownish.

Viburnum Mortonianum Standl. & Steyerm., sp. nov.—Frutex vel arbuscula, ramis crassiusculis densissime stellato-hirsutis, pilis fulvis sessilibus dense intertextis et patulis, internodiis elongatis; folia modica petiolata herbacea, petiolo crasso 12–16 mm. longo dense stellato-hirsuto; lamina oblonga usque lanceolato-oblonga vel ovato-oblonga 10–13 cm. longa 4.5–7.5 cm. lata acuta usque longiacuminata, basi obtusa usque late rotundata vel subtruncata, margine fere integro vel remote minuteque mucronato-denticulato, supra sat dense pilis longis rigidiusculis plerumque furcatis vel stellatis hirsuta, costa nervisque impressis, subtus paullo pallidior brunnescens, densissime pilis sessilibus rigidis stellato-hirsuta, costa tenera prominente, nervis lateralibus utroque latere 5–6 teneris prominulis arcuatis, venis paucis prominentibus laxe reticulatis; inflorescentia basi nuda 3–4 cm. longe pedunculata e basi pluriradiata, radiis subpatulis vel adscendentibus dense stellato-

hirsutis, 4.5–8.5 cm. lata dense multiflora, floribus breviter pedicellatis, bracteis parvis linearibus viridescentibus extus hispidulis; ovarium dense hirsutum; sepala lineari-lanceolata ca. 1.3 mm. longa hirtella; corolla extus hirsuta, limbo 5–6 mm. lato intus glabro, lobis suborbicularibus minute ciliolatis; stylus glaber; stamina longiexserta, filamentis glabris ca. 2 mm. longis, antheris late ovalibus ca. 0.8 mm. longis.—Guatemala: Dept. Chiquimula, Cerro Tixixí, 3–5 miles north of Jocotán, alt. 1,500 meters, ravine slope near top on north-facing side, November 10, 1939, *Julian A. Steyermark* 31606 (type in Herb. Field Mus.).

Leaves thick and soft, dark, dull green above, pale beneath, very rugose on both sides; flowers white; anthers pink-buff, the filaments white; hairs of the branches brown. The species is named for Mr. C. V. Morton, monographer of the species of *Viburnum* of Mexico and Central America. In his key (Contr. U. S. Nat. Herb. 26: 342. 1933) it appears to run to *V. jucundum* Morton, of Chiapas. That species, however, has relatively broader leaves, and the much denser pubescence consists of soft hairs less than half as large as those of *V. Mortonianum.*

COMPOSITAE

Achyrocline deflexa Rob. & Greenm. Amer. Journ. Sci. 50: 153. 1895. *A. Yunckeri* Blake, Field Mus. Bot. 17: 399. *pl. 16.* 1938.—The type of *A. deflexa* is *Pringle* 6054 from Sierra de San Felipe, Oaxaca, Mexico, at 2,100–2,400 meters; that of *A. Yunckeri* was collected at El Achote, Dept. Comayagua, Honduras, at 1,350 meters. The collections cited below represent a plant rather common in pine and oak forest in the mountains of central Guatemala. Comparison of them with the two species listed shows that they might be referred equally well to either, the differences mentioned as separating *A. Yunckeri* from *A. deflexa* being apparently of little importance, and not sufficiently stable. Guatemala: Dept. Quiché, forested barranco south of Chichicastenango, alt. 1,850 meters, *Standley* 62411. Dept. Chimaltenango, near Río Pixcayó, between Chimaltenango and San Martín Jilotepeque, alt. 1,650–1,800 meters, *Standley* 64495. Dept. Chimaltenango, Barranco de la Sierra, southeast of Patzúm, alt. 2,100 meters, *Standley* 61612. Dept. Guatemala, damp, wooded barranco 10 km. south of San Raimundo, alt. 1,800 meters, *Standley* 62903. The plant is a suffruticose herb about a meter high.

Adenocaulon lyratum Blake, Journ. Wash. Acad. Sci. 24: 435. *f. 1.* 1934.—The type of this, the only Central American repre-

sentative of its genus, is *Skutch* 622 from open oak woods, Chichavac, Dept. Chimaltenango, Guatemala. Two further collections may be reported: Slopes of Volcán de Acatenango, above Las Calderas, Dept. Chimaltenango, alt. 1,800–2,400 meters, December, 1938, and January, 1939, in damp thickets or moist forest, *Standley* 61774, 60003. The plants were found in abundance in several localities, but were exceedingly local in distribution. All those seen at this time were past flower and fruit, but with leaves fairly well preserved.

Adenostemma hirtiflorum Benth. Pl. Hartw. 75. 1841.—The type was collected by Hartweg (No. 531) at "Rancho Santa Rita," near Quezaltenango, Guatemala. A photograph of a specimen of this collection, from the Vienna herbarium, is in the Herbarium of Field Museum (negative No. 33181). The species appears limited in distribution, being known at present only from the Department of Quezaltenango: Forest openings, Palmar, alt. 1,290 meters, *Skutch* 1449; stems decumbent and rooting at the base; flowers white. Finca Pireneos, lower south-facing slopes of Volcán de Santa María, along spring-fed rivulet, alt. 1,300–1,500 meters, *Steyermark* 33228; stems procumbent; flowers white.

Alepidocline annua Blake, Journ. Wash. Acad. Sci. 24: 441. *f. 2.* 1934.—The genus is monotypic, being based on *Skutch* 722, found as a weed in a cornfield at Chichavac, Dept. Chimaltenango, Guatemala, at 2,430 meters. Two recent collections represent the same species: Guatemala: Moist bank, slopes of Volcán de Agua, south of Santa María de Jesús, Dept. Sacatepéquez, alt. 1,800–2,100 meters, December 10, 1938, in fruit, *Standley* 59457. Damp, open forest, above Las Calderas, Dept. Chimaltenango, alt. 1,800–2,100 meters, Dec. 15, 1938, *Standley* 60061; erect and in flower, the rays pink.

Archibaccharis Blakeana Standl. & Steyerm., sp. nov.—Frutex vel suffrutex 1–2.5 m. altus, interdum aliquanto recurvus, subsimplex vel saepius ramosus, ramis crassiusculis, saepe subflexuosis, obtuse angulatis, fere omnino glabris, ramis junioribus aliquanto villosulis, internodiis plerumque elongatis; folia majuscula essentialiter sessilia herbacea, plerumque late ovata usque rotundato-ovata, vulgo 6–13 cm. longa et 4–8.5 cm. lata sed interdum majora et superiora minora atque interdum oblongo-ovata, acuminata vel longiacuminata, basin versus abrupte contracta, obtusa usque subtruncata, et subito in partem petioliformem angustata, parte inferiore petioliformi anguste vel late alata, basi late dilatata, auriculata et amplexicauli; lamina supra viridis tactu asperrima dense scabra,

subtus pallidior ad nervos, costam venasque sparse breviterque villosula vel fere glabra, venulis arcte reticulatis, margine undulato-dentato, dentibus brevibus remotis mucronatis; capitula viridescenti-alba parva in cymas parvas rotundatas disposita, cymis in paniculas magnas foliatas aggregatis, pedicellis capitulorum plerumque 3–6 mm. longis villosulis, bracteis parvis linearibus pallidis; involucrum 3.5–4.5 mm. altum et aequilatum; phyllaria ca. 3-seriata inaequalia pallida linearia acuta vel obtusa ciliata, dorso sparse adpresso-pilosula vel fere glabra; radii nulli; corolla glabra 3 mm. longa; achaenia immatura compressa 1.2–1.5 mm. longa sparse adpresso-pilosula, pappi setis sordidis ca. 2.5 mm. longis.—Guatemala: Dept. Sacatepéquez: Near Antigua, brushy slope, alt. 1,500–1,600 meters, 1938–39, *Paul C. Standley* 58597 (type in Herb. Field Mus.). Above Pastores, alt. 1,680 meters, damp thicket, December, 1938, *Standley* 60817. Finca El Hato, northeast of Antigua, alt. 1,950–2,040 meters, December, 1938, *Standley* 61197. Barranco above Dueñas, dry, rocky forest, alt. 1,600–1,800 meters, January, 1939, *Standley* 63227. —Dept. Guatemala: Damp, wooded barranco 10 km. south of San Raimundo, alt. 1,800 meters, January, 1939, *Standley* 62895.—Dept. Chimaltenango: Near Finca La Alameda, near Chimaltenango, alt. 1,830 meters, damp thicket, December, 1938, *Standley* 59106.

The species is named for Dr. S. F. Blake, monographer of the genus. In his key to species (Contr. U. S. Nat. Herb. 20: 545. 1924) the present plant runs at once to *A. Pringlei* (Greenm.) Blake, a species known only from the State of Oaxaca, Mexico. That species, known to the writers only from description and illustration, differs in foliage details, especially in its broad-based upper leaves, and seems to be distinct from the Guatemalan plant in various other characters.

Archibaccharis flexilis Blake, Journ. Wash. Acad. Sci. 17: 60. 1927. *Hemibaccharis flexilis* Blake, Contr. U. S. Nat. Herb. 20: 549. 1924.—Based on *Tuerckheim* II.1636 from Cobán, Guatemala, and *Tuerckheim* II.728 from the same region. The plant proves to be rather widely distributed in Guatemala, as indicated by the following collections: Near San José, southeast of Tactic, Alta Verapaz, alt. 1,500 meters, wet thicket, *Standley* 69673. Above Tamahú, Alta Verapaz, alt. 900–1,200 meters, wet forest, *Standley* 70926. Saquijá, 43 km. northeast of Cobán, Alta Verapaz, damp limestone thickets, alt. 1,200 meters, *Standley* 70201. Near Cobán, damp pine forest, alt. 1,260–1,440 meters, *Standley* 69340. Slopes of Volcán de Agua, above Santa María de Jesús, Dept. Sacatepéquez,

alt. 2,250–3,000 meters, moist forest, *Standley* 65058. Hills of Finca Carmona, southeast of Antigua, Dept. Sacatepéquez, alt. 1,600–1,800 meters, damp forest, *Standley* 63698. Quisaché, Dept. Chimaltenango, forested barranco, alt. 1,800 meters, *Standley* 62291. Volcán de Atitlán, alt. 1,620 meters, Dept. Suchitepéquez, *Skutch* 1482. Finca Azucena, above Colomba, Dept. Quezaltenango, alt. 1,320 meters, damp forest, *Standley* 68019. The plant in general appearance as well as in habit differs strikingly from other members of the genus, reminding one somewhat by its habit of the genus *Mikania*. *Archibaccharis flexilis* is a slender, sometimes greatly elongate, woody vine, often climbing high upon tall trees, its branches then dangling far below the tree branches.

Archibaccharis subsessilis Blake, Brittonia 2: 339. 1937.—The plant was collected by Skutch at Nebaj, Dept. Quiché, Guatemala, at 1,890 meters. Several further collections have been made: Guatemala: Dept. San Marcos: Oak forest, Puente de Nahuatl-aa, near San Marcos, alt. 2,280 meters, *Standley* 66251; a shrub of 2 meters, the heads white. Along Quebrada Canjulá, between Sibinal and Canjulá, Volcán de Tacaná, alt. 2,200–2,500 meters, *Steyermark* 36046, 36059; on dry pine-fir slopes; a shrub 1.5–2.5 meters tall, or suffrutescent and only 30 cm. high; leaves olive-green; flowers white.

Cacalia peltata HBK. Nov. Gen. & Sp. 4: 170. *pl. 361*. 1820.—We find no record of the occurrence in Central America of this Mexican species, but the following collection apparently is referable to it: Guatemala: Dept. Quezaltenango, pine forest, uppermost ridge of Volcán de Santo Tomás, alt. 3,200 meters, January, 1940, *Steyermark* 34933.

Calea peduncularis HBK. Nov. Gen. & Sp. 4: 295. *pl. 408*. 1820.—While this well marked species is widely distributed in southern Mexico, it appears to be rare in Guatemala, and we find no mention of its occurrence in Central America. The following specimens are available from Guatemala: Finca Alameda, near Chimaltenango, alt. 1,800 meters, *J. R. Johnston* 828. Dept. Jalapa, between Miramundo and summit of Montaña Miramundo, between Jalapa and Mataquescuintla, alt. 2,000–2,500 meters, on slopes in open pine woods, *Steyermark* 32742. These collections are referable to var. *epapposa* HBK.

Calea Skutchii Blake, Journ. Wash. Acad. Sci. 24: 438. 1934.—The type was collected by Skutch near Chichavac, Chimaltenango,

Guatemala, and there was cited also a specimen from the road above Tecpám, in the same department. That the species is not exactly rare in Guatemala is shown by the following collections: Dept. Chimaltenango: Cerro de Tecpám, alt. 2,400–2,700 meters, in damp thickets or in pine or *Cupressus* forest, a shrub or tree of 3–7.5 meters, *Standley* 60946, 58759, 60941.—Dept. Totonicapán: Cumbre del Aire, between Huehuetenango and Sija, alt. 3,000–3,450 meters, moist thicket, a shrub or small tree, *Standley* 65860.—Dept. San Marcos: Puente de Nahuatl-aa, near San Marcos, alt. 2,280 meters, *Standley* 66261. Barranco Eminencia, alt. 2,100–2,700 meters, *Standley* 68519, 68598. Barrancos south and west of Tajumulco, Volcán de Tajumulco, alt. 2,300–2,500 meters, *Steyermark* 36568. El Boquerón, alt. 2,700 meters, *Cupressus* forest, a shrub or tree of 3–7.5 meters, *Standley* 66299.—Dept. Quezaltenango: Mountains above Ostuncalco, alt. 2,700 meters, *Standley* 66416. Bochantín, alt. 2,370 meters, *Skutch* 1970. Near Aguas Amargas, slopes of Volcán de Zunil, alt. 2,430–2,850 meters, *Standley* 65294. Volcán de Santa María, above Palojunoj, *Standley* 67525. Cumbre de Tuilacán, near San Martín Chile Verde, alt. 2,400 meters, in sandy *Alnus* forest, *Standley* 67821, 67774. Near Fuentes Georginas, Volcán de Zunil, alt. 2,500–2,850 meters, wet forest, *Standley* 67339, 67397, 67387. The plant doubtless extends into the State of Chiapas, Mexico.

Calea Standleyi Steyermark, sp. nov.—Frutex 3–5 m. altus; ramulis teretibus omnino glabris viridibus maculatis purpureo-fuscis, 0.5–1 cm. diam. leviter pentagonis, internodiis superioribus 1–3.5 cm. longis; foliis oppositis longipetiolatis; petiolis nudis viridibus maculatis purpureo-fuscis vel roseo-lavendulis glabris supra sulcatis, 1.5–6 cm. longis; laminis oblongo-ellipticis, 8–17 cm. longis, medio 3–7.5 cm. latis, longiacuminatis, basi sensim attenuatis, praeter apicem basimque serrulatis (dentibus utroque latere 7–26, 2–7 mm. separatis, 0.5–1 mm. altis, apice callosis), nervis primariis utroque latere 2–4, paribus infimis magis conspicuis, lamina ita 5–7-plinervia, pagina inferiore areolato-reticulata, firmiter membranaceis, supra obscuro-viridibus lucentibus glabris, subtus pallidis, praesertim ad nervos pilis minutis simplicibus adpressis conspersis vel glabris; capitulis heterogamis radiatis diffusissime corymbiformi-paniculatis numerosis, 10–60, anthesi 3–3.5 cm. latis, pedunculis basi vel prope basin bracteatis, 2–6 cm. longis, pilosis, pilis multilocularibus plerumque patentibus demum deciduis; involucro 3-seriato obgraduato 4–5 mm. alto, phyllariis extus sparse puberulis firmiter membranaceis vel subcoriaceis, extimis squarrosis oblongo-lanceolatis vel liguliformi-

bus obtusis 4–5 mm. longis, 1–2 mm. latis, viridibus, ceteris oblongis vel ovatis obtusis vel rotundis 2.8–3 mm. longis, 1.5–2 mm. latis, marginibus purpureo-rosaceis; disco ad anthesin 6–7 mm. alto, 7–8 mm. lato; radiis 8–10 albidis hermaphroditis fertilibus, tubo extus puberulo 1.5 mm. longo, lamina oblongo-oblanceolata apice rotundata et minute 3-crenulata plus minusve 7-nervia dorso minute glandulosa 1.8–2 cm. longa, 5 mm. lata; floribus disci multis, ca. 100, omnibus fertilibus, corollis subfusco-luteis vel obscure luteis, glanduloso-puberulis, 3 mm. longis (tubo 1 mm. longo, fauce 1.5 mm. longo, lobis 0.8–1 mm. longis); paleis complicatis concavisve flores hermaphroditos plus minusve amplectentibus, in fructu quam achaeniis latioribus, oblongis vel elliptico-oblongis, apicibus rotundatis, marginibus et apicibus minute erosis, 3.5–4.5 mm. longis, 2 mm. latis, dorso minute puberulis, obtuse carinatis, chartaceis, in statu fructifero prominulis; achaeniis pappiferis, eis disci compresso-tetragonis, latis, acute angulatis, eis radii triquetris, uno latere tantum hispidulo, ca. 2.5 mm. longis, 1–1.2 mm. latis, ad apices hirtellis, subnigris, obovatis vel turbinatis; pappi aristis persistentibus 0.5–1.2 mm. longis, hispidulis et laceratis, eis florum disci plerumque 2, florum radii 3. —Guatemala: Dept. San Marcos: Between Todos Santos and Finca El Porvenir, lower to middle slopes of Volcán de Tajumulco, alt. 1,300–3,000 meters, March 1, 1940, *Julian A. Steyermark* 37004 (type in Herb. Field Mus.). Slopes of barrancos tributary to and bordering Río Vega, between San Rafael at northeast portion of Volcán de Tacaná and Guatemala-Mexico line, alt. 2,500–3,000 meters, February 21, 1940, *Steyermark* 36359. Upper banks of barranco, Río Vega, near San Rafael and Guatemala-Mexico boundary, Volcán de Tacaná, alt. 2,500–3,000 meters, February 20, 1940, *Steyermark* 36277. Between Canjulá and La Unión Juárez, near southeast portion of Volcán de Tacaná, alt. 2,000–3,000 meters, February 22, 1940, *Steyermark* 36431.

Local name Altamisa. With its long, white rays, *Calea Standleyi* is by far the handsomest and showiest species of the genus. The pappus of 2–3 stout awns, numerous loosely corymbose heads on much elongate peduncles, serrulate, long-acuminate, and especially long-petiolate, peculiarly 4–8-nerved leaves which are glabrous or nearly so throughout, combined with the long, white rays, dull yellow disk flowers, fruticose habit, and glabrous stems, combine to make this species very distinct from all others. It is related to *Calea orizabaensis* Klatt which, however, has closely crowded heads on very short peduncles, shorter rays, much shorter petioles, sinuate-undulate leaf margins, and pubescent blades and branches. From *C.*

pachyphylla (Klatt) Blake it is easily separated by its long petioles, much larger and broader, differently nerved, serrulate leaves; from *C. guatemalensis* D. Sm. by its white and much longer rays and by leaf characters, and from *C. integrifolia* (DC.) Hemsl. by its more numerous and longer rays, much larger, loosely arranged instead of closely cymose heads, and long-petiolate, much larger, thinner leaves.

Erigeron aquarius Standl. & Steyerm., sp. nov.—Herba ramosa suberecta vel decumbens 30–60 cm. alta, caulibus tortuosis sat dense pilis longis albidis patulis laxis pilosis in sicco substriatis multifoliatis, internodiis plerumque foliis brevioribus; folia sessilia herbacea anguste oblongo-lanceolata usque lineari-oblanceolata plerumque 2.5–6.5 cm. longa et 6–11 mm. lata acuta vel subobtusa et apiculata, basin versus sensim angustata, basi ipsa acuta vel late cuneata, integra vel praesertim in foliis majoribus remote crenato-serrata, serraturis paucis, fere concoloria, utrinque pilis longiusculis patulis densiuscule pilosa; capitula numerosa ramos terminantia et singula, pedunculis valde elongatis gracilibus dense patulo-pilosis, bracteis paucis valde reductis linearibus vel anguste lanceolatis; involucrum late campanulatum ca. 8 mm. altum et 12 mm. latum; phyllaria 2–3-seriata inaequalia subadpressa linearia attenuata pallido-marginata, sparse pilis brevibus adpresso-pilosa; radii albi numerosissimi anguste lineares ca. 3 mm. longi in sicco erecti vel recurvi et revoluti; receptaculum subconvexum 3 mm. latum; corollae disci fere filiformes 4.5 mm. longae glabrae luteae; achaenia matura non visa, juvenilia brevia sparse adpresso-hispidula, pappi setis rigidiusculis fulvescentibus.—Guatemala: Dept. Sacatepéquez, slopes of Volcán de Agua, above Santa María de Jesús, alt. 2,250–3,000 meters, in moist forest, Feb. 11, 1939, *Paul C. Standley* 65053 (type in Herb. Field Mus.); also No. 65164, from the same region.

It is difficult to suggest any definite relationship for this species, which is a plant of decidedly ordinary appearance, and with no outstanding characters. It has been impossible to associate it satisfactorily with any species reported from Guatemala or southern Mexico.

Eupatorium angulifolium Robinson, Contr. Gray Herb. 65: 46. 1922.—The species was based on *Salvin & Godman* 265 from Barranco Hondo, Guatemala, and no other material has been reported. The following good series of specimens, mostly from the vicinity of the type locality, well illustrates the species and gives some idea of its variations: Guatemala: Dept. Sacatepéquez, Ba-

rranco Hondo, lower slopes of Volcán de Fuego, alt. 1,800 meters, *Standley* 60249. Dept. Sacatépéquez, near Las Lajas, common, alt. 1,200 meters, *Standley* 58139. Dept. Chimaltenango, shaded bank, Quisaché, alt. 1,800 meters, *Standley* 62311. Dept. Escuintla, along Río Guacalate, alt. 500–550 meters, *Standley* 58265. Dept. Quezaltenango, high barranco along Río Samalá, between Santa María de Jesús and Calahuaché, alt. 1,200–1,300 meters, *Steyermark* 33901. The plant is an exceptionally handsome and conspicuous one, growing almost always on the faces of wet cliffs or earth banks in shade. The very large and thin leaves, as much as 25 cm. long and almost as wide, are mostly clustered at the middle or top of the stem, the lax panicle of lavender heads rising well above them. The plants are simple and 30–100 cm. in height. In describing *E. angulifolium* Robinson compared it with *E. Petasites* Griseb., which was based on plants grown in Europe from supposedly Central American seed, its exact origin unknown. The differences emphasized as separating the two species scarcely hold when this recent series of specimens is examined, and it is suspected that the name *E. angulifolium* should fall into the synonymy of *E. Petasites*.

Eupatorium antiquorum Standl. & Steyerm., sp. nov.—Herba erecta ca. metralis simplex vel ut videtur sparse saltem superne ramosa, caule gracili tereti sat dense pilis longis patulis mollibus multilocularibus laxis villoso, internodiis bene elongatis plerumque 7–10 cm. longis; folia modica opposita remota longipetiolata membranacea, petiolo gracili 2–3 cm. longo dense villoso, foliis supremis tantum breviter petiolatis; lamina deltoidea vel ovato-deltoidea 5–6.5 cm. longa 3.5–4.5 cm. prope basin lata, longiacuminata, basi truncata vel breviter cordata, in fere toto margine arcte crenata, solemniter trinervia, ima basi 5-nervia, nervis exterioribus latere exteriore nervos plures emittentibus, supra viridis densiuscule pilis laxis villosa, subtus vix pallidior, ubique longivillosa; capitula parva numerosa cymosa, cymis laxis paniculam terminalem foliis reductis onustam 15–17 cm. longam et aequilatam efformantibus, ramis dense villosis, bracteis foliaceis lanceolatis, pedicellis plerumque 6–12 mm. longis; involucrum 4–4.5 mm. latum campanulare, phyllariis 2–3-seriatis, interioribus lineari-oblongis viridescentibus glabris 2–3-costatis ciliatis, apice obtusis vel rotundatis, extimis duplo brevioribus ovatis vel ovato-oblongis acutis vel acutiusculis; flores ca. 15 albi involucro vix longiores; corolla tubulosa glabra 2 mm. longa, lobis brevissimis late ovatis obtusis; achaenia columnaria nigrescentia 1.3 mm. longa obtuse angulata minute scaberula vel fere glabra, pappi

setis albis 2 mm. longis.—Guatemala: Near Antigua, Dept. Sacatepéquez, alt. 1,500–1,600 meters, in *Cupressus* grove, December 18, 1938, *Paul C. Standley* 60304 (type in Herb. Field Mus.).

A well marked species, not found elsewhere, although certainly it can not be confined to this locality. Special characters are the beautifully deltoid, closely crenate leaves and the copious, long, soft, spreading pubescence.

Eupatorium carmonis Standl. & Steyerm., sp. nov.—Herba erecta fere metralis simplex, caule gracili tereti in sicco olivaceo-brunnescenti fere glabro, parte juniore minute puberula, internodiis bene elongatis; folia numerosa sed remota modica vel majuscula longipetiolata tenuiter membranacea, petiolo gracili vulgo 3–4 cm. longo minute sparseque puberulo, superne anguste alato; lamina ovata, rhombico-ovata vel lanceolato-ovata vulgo 8.5–12.5 cm. longa et 4.5–5.5 cm. lata, breviter vel longius acuminata, prope basin subito contracta et attenuato-decurrens, ubique supra basin fere aequaliter arcteque serrata, utrinque fere glabra sed hinc inde sparsissime pilis minutis albidis praesertim ad nervos scaberula, subtus fere concolor, supra basin 5-plinervia; inflorescentia terminalis corymbiformis, capitulis parvis albis numerosis dense aggregatis, corymbo fere 3 cm. alto et 5 cm. lato, foliis multo breviore, capitulis sessilibus vel saepius breviter pedicellatis, pedicellis dense sordido-puberulis; involucrum 3–3.5 mm. altum campanulatum, phyllariis ca. biseriatis fere aequalibus viridescentibus 2-nerviis pallide marginatis acutis sparse puberulis vel pilosulis; corollae ca. 2.2 mm. longae glabrae anguste tubulosae; pappi setae albae 2.5 mm. longae; achaenia juvenilia glabra.—Guatemala: Damp forest, hills of Finca Carmona, southeast of Antigua, Dept. Sacatepéquez, alt. 1,600–1,800 meters, January 27, 1939, *Paul C. Standley* 63743 (type in Herb. Field Mus.).

The single available specimen is in early anthesis, and perhaps not altogether typical of the species. The plant, however, differs definitely from each of the numerous species with which it has been compared. The heads are remarkably small, and closely crowded in the small and inconspicuous corymb.

Eupatorium hastiferum Standl. & Steyerm., sp. nov.—Frutex 2.5 m. altus, ramis tetragonis in sicco fuscis glabris, internodiis superioribus plerumque 3–5 cm. longis; folia majuscula longipetiolata herbacea in sicco fusca, petiolo gracili 2–4 cm. longo glabro, basi valde dilatato et in pseudostipulam magnam undulatam amplexicaulem expanso; lamina variabilis deltoidea usque late ovata vel anguste triangularis 6.5–12 cm. longa 6–10 cm. lata longissime

angusteque attenuato-acuminata, basi late rotundata usque subcordata, lateribus prope basin rotundatis vel saepius angulatis, lamina ita saepe hastato-lobata, margine arcte minute serrato, basi trinervia, supra minute ad nervos venasque puberula, aliter fere glabra, subtus paullo pallidior, fere omnino glabra, nervis venisque prominentibus laxe reticulatis; inflorescentia terminalis corymbiformis rotundata ca. 10 cm. alta et 15–18 cm. lata, sparse foliata, ramis primariis elongatis nudis, capitulis campanulatis majusculis numerosissimis in cymas sublaxas rotundatas aggregatis, pedicellis gracilibus plerumque 3–8 mm. longis minute puberulis; involucrum 6–7 mm. altum, phyllariis ca. 3-seriatis, gradatis, interioribus oblongis apice rotundatis fere glabris 3–5-nerviis pallidis, extimis brevissimis late ovatis vel fere orbicularibus apice rotundatis vel obtusis; flores ca. 20 ut videtur albi; corollae fere filiformes 5.5 mm. longae glabrae; achaenia columnaria 2 mm. longa 4-angulata fere omnino glabra nigrescentia, pappi setis albis 4 mm. longis.—Guatemala: In wet forest, mountains east of Tactic, Dept. Alta Verapaz, on the road to Tamahú, alt. 1,500–1,650 meters, April 9, 1939, *Paul C. Standley* 71125 (type in Herb. Field Mus.).

A well marked species, noteworthy for the chiefly hastate leaves, and for the dilated bases of the petioles.

Eupatorium huehuetecum Standl. & Steyerm., sp. nov.—Herba erecta ca. metralis ramosa(?), caulibus gracilibus teretibus brunnescentibus obscure striatis, novellis sparse minuteque puberulis, internodiis plerumque elongatis interdum foliis longioribus; folia parva longipetiolata membranacea opposita, petiolo gracili 1–2 cm. longo minutissime puberulo vel fere glabro; lamina oblongo-ovata vel lanceolato-oblonga 4.5–6.5 cm. longa 1.5–2.2 cm. lata acuta vel breviter acuminata, basi acuta vel subobtusa et saepe paullo inaequalis, supra fusco-viridis adpresso-hispidula et tactu asperula, subtus paullo pallidior fere omnino glabra, bene supra basin 5-plinervia, nervis venisque prominentibus laxe reticulatis; capitula parva alba numerosa in cymas parvas rotundatas subdensas aggregata, cymis paniculam rotundatam foliatam 6–12 cm. longam angustam efformantibus, foliis inflorescentiae reductis et fere bracteiformibus parvis, supremis parvis linearibus, pedicellis plerumque 2–6 mm. longis gracillimis griseo-puberulis; involucrum campanulare 4 mm. altum, phyllariis linearibus fere omnibus aequalibus acutis vel obtusis pallidis plerumque 2-nerviis pallide marginatis dorso sparse puberulis, apice ciliatis; flores ca. 30; corollae glabrae, tubo filiformi superne subito in faucem dilatato, lobis minutis brevissimis; achaenia juve-

nilia ca. 1.2 mm. longa glabra, pappi setis albis 2 mm. longis.—Guatemala: Moist thicket, Río Pucal, Dept. Huehuetenango, alt. 1,775 meters, February 20, 1939, *Paul C. Standley* 65798 (type in Herb. Field Mus.).

A plant of most ordinary appearance, with no outstanding characters, but not exactly matched by any *Eupatorium* species known from Guatemala or southern Mexico.

Eupatorium oresbioides Robinson, Proc. Amer. Acad. 44: 618. 1909; in Standl. Contr. U. S. Nat. Herb. 23: 1450. 1926.—The species was described from Oaxaca, Mexico, and is reported also by Robinson (loc. cit.) from Guatemala. It is found to be a common plant in the latter country, as the following collections show. The species seems to be too close to *E. oresbium* Robinson, of Morelos, Mexico, but perhaps can be maintained as distinct. The leaves are variable in the Guatemalan plants, and are not always angled on the sides, near the base, as described originally. Guatemala: Dept. Sacatepéquez: Cuesta de las Cañas, above Antigua, alt. 1,950 meters, wet thicket, *Standley* 58969; a shrub of 3 meters, the heads pale purple; also No. 58951.—Dept. Chimaltenango: Quisaché, alt. 1,800 meters, moist, forested barranco, *Standley* 62024; a shrub of 1.8 meters, the heads lavender. Volcán de Acatenango, above Las Calderas, alt. 1,800–2,700 meters, in damp or wet forest, *Standley* 60054, 61814, 61950; a shrub of 1.5–3 meters, common, the heads lavender.—Dept. Quezaltenango: Slopes of Volcán de Zunil, above Aguas Amargas, alt. 2,430–2,850 meters, moist or wet forest, *Standley* 65293, 65438.—Dept. San Marcos: Barranco Eminencia, above San Rafael Pie de la Cuesta, wet forest, alt. 2,100–2,400 meters, *Standley* 68621; a shrub or tree of 3–4.5 meters, the heads bright purple. Along Río Tacaná, above San Antonio, wet thicket by stream, alt. 2,460 meters, *Standley* 66144. Puente de Nahuatl-aa, near San Marcos, alt. 2,280 meters, damp ravine, *Standley* 66230.

Eupatorium ovillum Standl. & Steyerm., sp. nov.—Frutex ramosus 1.5 m. altus, ramis crassiusculis brunneis dense viscido-puberulis teretibus, internodiis brevibus vel elongatis; folia inter minima opposita numerosa petiolata crasse membranacea, petiolo crassiusculo 6–14 mm. longo sordide viscido-puberulo; lamina late ovata vel rotundato-ovata 1.5–3 cm. longa 1–2.5 cm. lata acuta usque obtusissima, basi late rotundata vel truncata, remote obscure crenata vel subintegra, supra viridis sparse minute granuloso-puberula vel fere glabra, venis non elevatis, subtus pallidior dense minute glanduloso-punctata, paullo supra basin triplinervia, nervis prominentibus,

media supra basin utroque latere nervum 1 emittente, venis obscuris; capitula modica purpurascenti-alba in cymulas parvas rotundatas vel corymbiformes ramos breves foliatos terminantes aggregata, cymulis paniculam angustam elongatam foliatam efformantibus, pedicellis gracilibus usque 7 mm. longis viscido-puberulis; involucra anguste campanulata 7–8 mm. longa, phyllariis paucis vix ultra 10 valde inaequalibus biseriatis linearibus acutis vel attenuatis 2–3-costatis viridescentibus sparse minute viscido-puberulis; flores ca. 10; corollae glabrae ca. 5 mm. longae, tubo gracili sursum paullo sensim dilatato, lobis brevissimis anguste ovatis acutis; achaenia immatura 2.3 mm. longa glabra, pappi setis albis 4 mm. longis minute scaberulis.—Guatemala: Moist thicket, Cumbre del Aire, Dept. Totonicapán, on the road between Huehuetenango and Sija, alt. 3,000–3,450 meters, February 20, 1939, *Paul C. Standley* 65862 (type in Herb. Field Mus.). Along road east of Los Encuentros, Dept. Sololá, alt. 2,400–2,850 meters, January 11, 1939, brushy slope, *Standley* 62355 (specimen sterile, but evidently conspecific with the type).

Eupatorium ovillum is a rather isolated species, in habit and foliage slightly suggestive of the genus *Mikania*. Distinguishing characters are the small leaves, with rather pale under surface, and the few, very unequal phyllaries. The specific name refers to the omnipresent and all too numerous (at least for botanical collectors) sheep of the region in which the type was collected.

Gnaphalium brachyphyllum Greenm. Field Mus. Bot. 2: 267. 1907.—The species was based on *Kellerman* 5301, collected on Cerro Quemado, just outside the city of Quezaltenango, Guatemala. So far as we know, no further material of the species has been reported, but as a matter of fact the plant is common and almost weedy in the vicinity of Quezaltenango and elsewhere in the Occidente of Guatemala. The following collections are at hand: Dept. Quezaltenango: Volcán de Santa María, Dept. Quezaltenango, alt. 1,350 meters (the elevation seems rather improbable), *Kellerman* 6331. Near Quezaltenango, alt. 2,280–2,400 meters, *Standley* 67284; on steep bank, in dense clumps, *Standley* 66418. Cerro La Pedrera, south of Quezaltenango, dry, rocky hillside, alt. 2,400 meters, *Standley* 65550; an herb 30 cm. high.—Dept. San Marcos: Vicinity of Sibinal, alt. 2,500 meters, dry, white clay slopes on ridge leading toward Volcán de Tacaná, *Steyermark* 35959, 35968.—Dept. Chimaltenango: Barranco La Sierra, southeast of Patzúm, pine and oak forest, common, alt. 2,100 meters, *Standley* 61665.

Neurolaena macrophylla Greenm. Proc. Amer. Acad. 39: 118. 1903.—The type is from Chicharras, Chiapas, Mexico, and in *North American Flora* (34: 308. 1927) the species is reported only from Chiapas. It is now known to extend into Central America: Guatemala: Dept. Suchitepéquez, in woods, Finca Moca, alt. 900 meters, *Skutch* 2055; a shrub or small tree, to 7.5 meters in height; flowers yellow. Dept. Quezaltenango, Finca Pireneos, lower south-facing slopes of Volcán de Santa María, alt. 1,300–1,500 meters, damp thicket, *Standley* 68437; *Steyermark* 33224; a coarse herb or shrub 2–2.5 meters tall; heads yellow or greenish yellow.

Oxylobus adscendens (Schultz Bip.) Rob. & Greenm. Proc. Amer. Acad. 41: 272. 1905. *Ageratum adscendens* Schultz Bip. ex Hemsl. Biol. Centr. Amer. Bot. 2: 80. 1881.—Described from the Volcán de Orizaba, the plant is known from the states of Mexico, Puebla, and Hidalgo in Mexico. Only recently has it been found in Guatemala: Dept. San Marcos, between San Sebastián and summit of Volcán de Tajumulco, alt. 3,800–4,600 meters, February, 1940, *Steyermark* 35512. Local name Bretónica. An herb growing among dry, rocky bunchgrass in open, grassy groves between the pine tree area and halfway to the summit; phyllaries dull green, tinged outside with purplish; peduncle dull magenta; leaves subcoriaceous, grass-green.

Oxylobus glanduliferus (Schultz Bip.) Gray ex Klatt, Leopoldina 20: 75. 1884. *Ageratum glanduliferum* Schultz Bip. ex Hemsl. Biol. Centr. Amer. Bot. 2: 82. 1881.—Described from the state of Oaxaca, Mexico, and in the *Trees and Shrubs of Mexico* (Contr. U. S. Nat. Herb. 23: 1423. 1926) reported by Blake only from that state. The following recent collections indicate a wider range for the species: Mexico: Mount Tacaná, Chiapas, alt. 2,000–4,038 meters, *Matuda* 2320 (determined by Blake).—Guatemala: Volcán de Santa María, Dept. Quezaltenango, *Skutch* 857. Volcán de Santa María, in forest at 3,300 meters, *Standley* 67688; a very viscid herb a meter high, the flowers white. Dept. San Marcos, between San Sebastián and summit of Volcán de Tajumulco, alt. 3,800–4,600 meters, *Steyermark* 35557; a shrub about a meter high; leaves glutinous, dull green; flowers white; the plant has the odor of black pepper, noticeable at a distance of two feet. Dept. San Marcos, between Sibinal and summit of Volcán de Tacaná, alt. 2,500–4,400 meters, upper, dry slopes, *Steyermark* 36141.

Pacourina edulis Aubl. Pl. Guian. 800. *pl. 316.* 1775.—Although this composite has a wide range in South America, from Colombia to

Paraguay, it seems to be rather rare or at least sporadic in occurrence. So far as we know, in continental North America it has been reported only from Nicaragua. The following collection proves its existence farther northward: Guatemala: Dept. Jutiapa, Lago de Atescatempa, south of Asunción Mita, alt. 500–800 meters, November, 1939, *Steyermark* 31876. Growing in water 60–90 cm. deep; stems inflated, 2–3 cm. thick, light green; leaves with spine-tipped teeth, dark green above; heads sessile in the leaf axils, the bracts dull green bordered with white; flowers rose-lilac. It is of interest to note Aublet's statement that his plant grew in land inundated by the tide. Weddell reports the local name of Palo de yesca for his collection of the species made in Paraguay.

Perezia carpholepis (Sch. Bip.) Gray, Proc. Amer. Acad. 19: 60. 1883. *Acourtia carpholepis* Sch. Bip. ex Gray, loc. cit. in syn.—The species is cited by Bacigalupi (Contr. Gray Herb. 97: 36. 1931) only from the states of Puebla and Chiapas, Mexico, the collections reported being only those known when the species was first described. No authentic material is available for comparison, but the following collections agree in almost every detail with Bacigalupi's description of the Mexican specimens: Guatemala: Dept. Sacatepéquez: Finca El Hato, northeast of Antigua, alt. 1,950–2,040 meters, oak forest, a weak, reclining herb 1–2 meters long, scarce, *Standley* 61149. Near Antigua, brushy slope, erect, rare, sterile, alt. 1,500–1,600 meters, *Standley* 61746.—Dept. Jalapa: La Laguna, Volcán Jumay, 1 mile north of Jalapa, alt. 1,400–1,600 meters, *Steyermark* 32301; climbing and sprawling on sides of barranco in oak thickets; flowers lilac; leaves pale grass-green.

Perezia reticulata (Lag.) Gray, Pl. Wright. 1: 128. 1852. *Proustia reticulata* Lag. ex D. Don, Trans. Linn. Soc. 16: 200. 1830. *Perdicium serrulatum* Sessé & Moc. ex D. Don, loc. cit. in syn.—In Bacigalupi's account of the genus *Perezia* this species (Contr. Gray Herb. 97: 37. 1931) is reported from Mexico only, but it extends into Guatemala: Dept. Guatemala, in 1939, *Ignacio Aguilar* 380. Dept. Guatemala, near Amatitlán, brushy slope, alt, 1,170 meters, rare, an herb a meter high, *Standley* 61261. The second collection is sterile, but agrees with the Aguilar plant, which is in flower. It may be noted that *Perdicium serrulatum* is represented in the Sessé & Mociño Herbarium by No. 3082 (also as No. 1584), the label bearing this name. No. 3377, a second specimen obviously of the same species, bears another and quite different specific name under the generic name of *Perdicium*.

Perymenium ruacophilum Donn. Smith, Bot. Gaz. 55: 437. 1913.—The type was collected on the Volcán de Santa María, Dept. Quezaltenango, Guatemala, at 2,500–3,500 meters, *E. W. Nelson* 3727. The elevation given includes the whole northern slope of the volcano, along which the collector probably ascended the peak, and one can only guess in which particular belt of vegetation the type specimen may have been collected. The following collections agree perfectly with the original description of the species, of which the writers have seen no authentic material: Guatemala: Dept. Quezaltenango, uppermost wooded ridge of Volcán de Santo Tomás, alt. 3,200 meters, *Steyermark* 34810; shrubby, 2.5–3 meters tall; leaves firmly membranaceous, rich grass-green above, paler green beneath; rays white; disk brown-yellow; involucre pale green, tinged at the top with dark brown. Mountains southeast of Palestina, alt. 2,700 meters, damp, dense forest, *Standley* 66332; a weak herb, the rays white. Pine and fir forest, Volcán de Zunil, alt. 2,500–3,800 meters, *Steyermark* 34721; local name Sajoc; a shrubby vine 1.5–3 meters tall; disk brownish yellow, the rays white.—Dept. Sacatepéquez: Slopes of Volcán de Agua, above Santa María de Jesús, alt. 2,250–3,000 meters, damp forest, *Standley* 65163; an erect herb 1–2 meters high, scarce.—Dept. Chimaltenango: Cerro de Tecpám, region of Santa Elena, alt. 2,700 meters, damp thicket, *Standley* 58668; an herb a meter high. The species is noteworthy in the genus for its rather handsome heads with long, showy, white rays.

Piqueria Standleyi Robinson, Contr. Gray Herb. 104: 4. 1934.—The Sierra de Apaneca, Salvador, is the type locality of this species, which has been recorded only from the type. The shrub is common in nearby Guatemala, where it extends as far westward at least as the Department of Suchitepéquez. The following collections are in the Herbarium of Field Museum: Dept. Santa Rosa: Dry slopes of barranco, south-facing slopes of Volcán de Tecuamburro, north of Chiquimulilla, alt. 250–500 meters, *Steyermark* 33133. Near Oratorio, alt. 1,200 meters, damp forest, *Standley* 60669; a shrub of 1.5 meters, the flowers white.—Dept. Escuintla: San Antonio Jute, alt. 780 meters, dry thicket, *Standley* 64898; a slender shrub of 1.8 meters. Near Escuintla, damp thicket, alt. 135–300 meters, *Standley* 63937. Río Guacalate, alt. 500–600 meters, damp thicket, *Standley* 60162, 58259.—Dept. Sacatepéquez: Near Las Lajas, brushy slope, alt. 1,200 meters, *Standley* 58063; a slender shrub 1–1.5 meters high, common.—Dept. Suchitepéquez: Along Río Madre Vieja above Patulul, alt. 450 meters, damp thicket, *Standley* 62201. The collec-

tions cited have been compared with the type in the U. S. National Herbarium, kindly lent for study by Dr. William R. Maxon. The type is a poor specimen, with much reduced inflorescence, and the original description of the species does not give a good picture of the plant as it is in a well developed state.

Polymnia quichensis Coult. Bot. Gaz. 20: 48. 1895.—The type was collected by Heyde and Lux at Chiul, Dept. Quiché, Guatemala, at 2,400 meters. Apparently the species is known only from Guatemala, the following collections being at hand: Dept. Jalapa: Vicinity of Soledad, Montaña Miramundo, between Jalapa and Mataquescuintla, alt. 2,000–2,500 meters, along the border of cloud forest, *Steyermark* 32621; local name Carricillo; an herb 3 meters tall; leaves grass-green on both sides; stems purple; rays yellow.—Dept. San Marcos: Region of Barranco Eminencia, above San Rafael Pie de la Cuesta, alt. 2,100–2,700 meters, *Standley* 68555, 68575, 68472; an herb 1–1.5 meters high; heads yellow. The foliage is exceedingly variable, and the pubescence inconstant. It may be that with more ample material, more than a single species can be recognized.

Rensonia salvadorica Blake, Journ. Wash. Acad. 13: 145. 1923; op. cit. 17: 62. *f. 1.* 1927.—A monotypic genus, confined, apparently, to the Pacific slope of Central America, described originally from Salvador, and reported also from Guanacaste, Costa Rica. The plant is rather common and widely distributed also in Guatemala: Dept. Suchitepéquez, edge of thicket, Finca Moca, alt. 930 meters, a shrub of 3.5 meters, *Skutch* 1572. Dept. Suchitepéquez, along Río Madre Vieja, above Patulul, alt. 450 meters, rocky thicket, a tree of 6 meters, *Standley* 62236. Dept. Sacatepéquez, near Las Lajas, alt. 1,200 meters, damp thicket, a shrub of 3 meters, *Standley* 58110, 58136. Dept. Escuintla, near Las Lajas, alt. 1,200 meters, moist thicket, a shrub of 3 meters, *Standley* 58148. Dept. Santa Rosa, Volcán Tecuamburro, along trail to San Francisco Tecuamburro, middle slopes of forested barranco, a shrub or tree of 4.5–6 meters, *Steyermark* 33163.

One of the handsomest and showiest of the Compositae ever collected has been found recently in the mountains of western Guatemala by the authors on separate expeditions to that country. One would naturally suppose that a plant with such large and showy flowers would have been described long ago, but, surprisingly, the plant appears not only to be an undescribed species, but to possess

highly distinctive generic characters that clearly segregate it from all other genera of Compositae. The plant is, therefore, remarkable not only for its exceptional beauty, but also because it possesses many characters that immediately set it off as a new genus.

It is with great pleasure that the authors dedicate this genus to Professor Ulises Rojas, Director of the Botanical Garden of Guatemala, professor of botany in the schools of Guatemala, and author of several botanical textbooks. Professor Rojas has shown the authors every possible courtesy and generously provided them with many facilities while they were conducting field work in Guatemala. Moreover, he personally accompanied the senior author when this new genus was discovered, so that it is particularly appropriate that his name should be associated with this plant. It is easily one of the half dozen most handsome and showy ones of all Central America, and in beauty is scarcely surpassed by any other.

Rojasianthe Standl. & Steyerm., gen. nov.—Herbae elatae fruticosae ramosae, ramis oppositis; folia opposita magna longipetiolata palmatinervia saepius lobata vel angulata atque dentata; pedunculi paullo apice incrassati et dilatati, in statu fructifero subfistulosi; capitula heterogama magna radiata ad apices ramulorum cymose disposita; flores radii ligulati neutri uniseriati, ligulis albis, pappi setis pluribus brevibus sursum serrulatis caducis; flores disci hermaphroditi tubulosi numerosi, omnibus fertilibus, setis pappi ca. 10 linearibus subaequalibus sursum serrulatis basi et apice longiattenuatis; corollae tubus albus limbo duplo brevior, limbo ampliato elongato superne nigro profunde 5-fido, dentibus nigris; involucrum late hemisphericum biseriatum, phyllariis interioribus 8–10 subaequalibus imbricatis subgraduatis membranaceis basi liberis paullo scarioso-marginatis, phyllariis exterioribus crassioribus brevioribus angustioribus reflexis; receptaculum planum vel subconvexum paleaceum; paleae flores omnes amplectentes, in statu fructifero solemniter accrescentes, profunde 10–12-pectinatae; filamenta brevia dense pilosula; antherae basi integrae obtusae, appendice terminali ovato acutiusculo; achaenia matura epapposa subcompressa, aliquanto tetragona, obovata, apice subtruncata et oblique subasymmetrica.

Type species, *Rojasianthe superba* Standl. & Steyerm., sp. nov.

Tall, fruticose herbs, the stems upright, several from the base, ligneous, hollow, jointed, simple below, branched above, terete, corky-lenticellate. Branches opposite. Leaves opposite, long-petiolate, large, divaricate-spreading, 3–7-palmate-nerved, mucro-

nate-dentate, usually more or less lobed or angled. Peduncles slightly thickened and ampliate just below the heads, in fruit slightly fistulose. Heads heterogamous, radiate, large and very showy, few to several, terminating the branches, cymosely arranged. Ray flowers neutral, ligulate, spreading, acuminate and entire at the apex, white or tinged with pale lilac or pink, showy, 1-seriate, the pappus of several short, upwardly serrate, caducous awns. Disk flowers perfect, tubular, regular, numerous, 200 or more, all fertile, with a caducous pappus of about 10 linear, subequal, upwardly serrate awns long-tapering at base and apex. Disk flowers constricted into a white corolla tube one-third the length of the corolla, the limb ampliate, elongate, black in the upper half, deeply 5-fid, the lobes about two-thirds the length of the limb, black. Involucre broadly hemispheric, 2-seriate, resembling that of *Dahlia*, the inner bracts 8–10, large, overlapping, subequal, the innermost ones the largest, slightly graduated, membranaceous, free at the base, slightly scarious-margined, in bud erect and completely covering the flowers, in anthesis spreading, with upwardly curved margins, the outer bracts more indurate, more firmly membranaceous, shorter and narrower than those of the inner series, of which 6–8 are reflexed in bud and in anthesis. Receptacle flat or very slightly convex, conspicuously paleaceous. Pales uniformly subtending and nearly encircling the ray and disk florets, enlarging in fruit, each pale deeply 10–12-bristly-pectinate, the processes in fruit conspicuous and becoming indurate and spinose-bristly. Filaments short, densely pilosulous with short, white, subequal, multicellular hairs in the upper half. Anthers entire and obtuse at the base, the appendage at the apex ovate, acutish. Style branches of the disk florets elongate, oblanceolate, acute, short-puberulous on the dorsal surface. Pappus of about 10 slightly unequal, slender awns, upwardly serrate with 11–20 upwardly curved, slender teeth on the margins, slenderly tapering at the base and tip, very caducous. Achenes epappose, somewhat dorsally compressed, somewhat tetragonous, obovate, subtruncate and slightly and obliquely asymmetric at the top, sparsely appressed-puberulous on the surface, the lateral margins acutely angled, the dorsal and ventral surfaces obtusely keeled.

This genus is remarkable in many respects. While its conspicuously paleaceous receptacle, ecaudate-based anthers, somewhat tetragonous achenes, and opposite leaves ally it apparently to the tribe *Heliantheae*, other characters it possesses are so distinct as to set it off immediately from any known genus in the family. Its large, deeply pectinate-bristly pales, greatly enlarging in fruit, have no

FIG. 1. Flowering branch of *Rojasianthe superba*, with a single detached leaf from the main stem.

duplicate among the *Heliantheae*. Of course, in such genera of the *Heliantheae* as *Echinacea*, the tips of the pales become rigid and spinose, and are simulated in fruit by the indurate, pectinate processes of *Rojasianthe*. In general and superficial characters of shrubby habit, large, opposite leaves, and showy heads the genus resembles some species of *Montanoa*, but the characteristic scarious, locular-like, convex-encircling, mostly entire pales and entirely different pappus or lack of it, and yellow disk flowers in the latter genus distinguish it at once from *Rojasianthe*. The heterogamous heads of *Rojasianthe* with their black disk flowers and white or lilac-tinged ray flowers are not matched elsewhere in the *Heliantheae*. The large heads of *Rojasianthe* combined with its 2-seriate involucre and hollow, jointed stems filled with liquid, simulate some of the large, shrubby species of *Dahlia*, but the latter genus is unlike *Rojasianthe* in its more elongate style branches, pinnate leaves (except in *Dahlia cardiophylla* Blake & Sheriff), subentire pales, epappose flowers, yellow disk flowers, and short corolla lobes of the disk flowers. The very caducous pappus of approximately 10 slender, serrate awns allies *Rojasianthe* in the *Heliantheae* to *Perymenium* and *Melanthera*, and to such species of *Perymenium* as *P. ruacophilum* D. Sm. and *P. grande* Hemsl., but these genera are at once distinguished from *Rojasianthe* in possessing entirely different pales, yellow or brownish disk flowers, much smaller heads, and usually fertile ray flowers. No matter how closely *Rojasianthe* is compared with other genera, its combination of large, showy heads, black, wholly fertile disk flowers, white or lilac-tinged, neutral rays, deeply pectinate-bristly pales (conspicuously enlarged in fruit), pappus of about 10 very caducous, slender awns, 2-seriate involucre, opposite leaves, densely pilosulous filaments, epappose achenes, and long corolla lobes of the disk flowers separates it from any known genus of Compositae.

Its affinities with the *Heliantheae* are emphasized by the rank odor of the leaves and involucre, typical of many helianthoid plants, especially *Ambrosia trifida*, *Iva ciliata*, and *Helianthus*. If one stresses the character of the caducous, numerous, slender pappus bristles in *Rojasianthe*, the latter may be placed near *Perymenium* in the subtribe *Verbesineae* of Bentham and Hooker, to which group it does not bear much resemblance. If, on the other hand, its general habit, appearance, and 2-seriate involucre suggest, at least superficially, its affinities with *Dahlia* in the subtribe *Coreopsidae*, it may, then, be more properly placed there. Within the *Coreopsidae*, however, *Rojasianthe* has no near relative, with its many-awned, very caducous pappus and pectinate-bristly pales.

Rojasianthe superba Standl. & Steyerm., sp. nov.—Herba fruticosa 3–6-metralis; folii lamina ovata usque late triangulari-ovata, acuminata usque caudata, basi truncata vel cordata, utroque latere 2–4-angulata, marginibus mucronato-crenatis, palmatim 3–7-nervia, membranacea, supra minute scaberula et asperula, subtus saepius densius ochraceo-scaberula et glandulis sessilibus conspersa, ad nervos puberula; capitula 8–9 cm. lata, pedunculis dense hirtellis; discus 13–15 mm. altus 25–35 mm. latus; phyllaria interiora 10–15 mm. longa, late ovalia vel subrotunda, apice rotundata, exterioribus late ovatis obtusis 8–11 mm. longis 5–8 mm. latis; radii 12–15 late elliptici, utrinque attenuati, apice acuminati, 3.5–4 cm. longi; achaenium 6 mm. longum 2.8–3 mm. latum, sparse adpresso-puberulum, apice densius puberulum.

A frutescent herb, 3–6 meters tall; stems light gray-brown, the old, ligneous, lower portions glabrous, 2–10 cm. in diameter; young stems and branches 6–8-ridged, sparsely to densely sordid-hirtellous; leaf blades ovate or broadly triangular-ovate in outline, acuminate to caudate, at base truncate or cordate, 2–4-angled on each side, the lobes short, toothed, and sometimes bearing secondary lobes, the terminal lobe longest and mostly tapering, the margins broadly mucronate-crenate, the larger main cauline leaves with a blade 10–22 cm. long and 8–22 cm. broad, the uppermost cauline leaves and those subtending the peduncles smaller, palmately 3–7-nerved, 3 or 5 of the main nerves prominent, thin, membranaceous, divaricately spreading or drooping (easily wilting), dull grass-green on the upper surface, slightly paler on the lower surface, minutely scaberulous and asperulous on the upper surface, usually more densely gray-buff-scaberulous and with resinous, sessile glands on the lower surface, especially puberulous on the main nerves of the lower surface, the hairs simple, those on the nerves and veinlets of the lower surface longer and looser than the ones on the remaining portion of the lower leaf surface, the hairs on the upper surface of two kinds: a stout, broad-based, curved, hispidulous hair, and a shorter, linear, weaker, straight, appressed type. Base of blade with a small, auriculate appendage at the junction with the petiole. Petiole exalate, 2–10 cm. long, densely buff-brown-hirtellous. Heads loosely and cymosely arranged, 3–6 at the ends of the branches, usually a single head terminating a peduncle, about 200-flowered, including the rays 8–9 cm. across. Peduncles densely hirtellous. Disk 1.3–1.5 cm. high, 2.5–3.5 cm. broad, slightly convex. Disk corollas black in the upper half, dull whitish in the lower half, 8 mm. long. Tube of the disk corolla 2.5–3.5 mm. long, 0.5–0.8 mm. broad, whitish, densely

puberulous; corolla limb 3 mm. long, mostly black, sparsely glandular on the outer surface; corolla lobes black, 2.5–3 mm. long, 0.5 mm. broad, sparsely pilosulous and glandular with sessile glands, spreading-squarrose. Involucre 2-seriate, the inner series slightly graduated, 1–1.5 cm. high, the outermost involucral bracts broadly ovate, obtuse, 8–11 mm. long, 5–8 mm. broad, firmly membranaceous, densely appressed-puberulous on both surfaces, slightly scarious on the margins; inner series of bracts imbricate, scarious on the margins, thinner, more membranaceous, broadly oval or subrotund, rounded at the tip, the innermost ones the largest, 1.3–1.8 cm. long, 1–1.5 cm. broad, glabrous; rays 12–15, broadly elliptic, tapering at each end, acuminate at the apex, the ligule puberulous and gland-dotted with sessile glands on the back, 3.5–4 cm. long, 1–1.2 cm. broad in the broadest portion; pales conspicuous in fruit, greenish straw-color, the spinose-bristly pectinations 3–4 mm. long in fruit; pappus of disk flowers 2–3 mm. long, of the ray flowers 1.5–2 mm. long. Achene epappose, 6 mm. long, 2.8–3 mm. broad in the upper half, mottled dull brown and blackish, sparsely puberulous on most of surface with appressed hairs, densely puberulous around the top.—Guatemala: Dept. San Marcos: Thickets of ravine along stream, upper, south-facing, forested slopes of Volcán de Tajumulco, between Las Canojas and top of ridge, 7 miles from San Sebastián, alt. 3,300–3,900 meters, February 16, 1940 *Julian A. Steyermark* 35835 (type in Herb. Field Mus.). At base of waterfall in thickets along road between San Sebastián at km. 21 and km. 8, 8–18 miles northwest of San Marcos, alt. 2,700–3,800 meters, February 15, 1949, *Steyermark* 35773. Moist floor of barranco between town of Tajumulco and Loma Buena Vista, northwestern slopes of Volcán de Tajumulco, alt. 2,300–2,800 meters, February 28, 1940, *Steyermark* 36864. Shaded ravine, slopes of barrancos tributary to and bordering Río Vega, between San Rafael at northeast portion of Volcán de Tacaná and Guatemala-Mexico line, alt. 2,500–3,000 meters, February 21, 1940, *Steyermark* 36310. Sunny margin of stream, Río Vega, near San Rafael and Guatemala-Mexico boundary, Volcán de Tacaná, alt. 2,500–3,000 meters, February 20, 1940, *Steyermark* 36206.—Dept. Quezaltenango: Wet forest, Fuentes Georginas, western slopes of Volcán de Zunil, alt. 2,850 meters, March 4, 1939, *Standley* 67513, 67400, 67379. Wet thicket, Cumbre de Tuilacán, southwest of San Martín Chile Verde, alt. 2,400 meters, March 8, 1939, *Standley* 67812.

The local names given for this plant are Espina, in reference to the bristly fruiting pales, and Mac, the latter given by one of the Indians living in the village of Tajumulco.

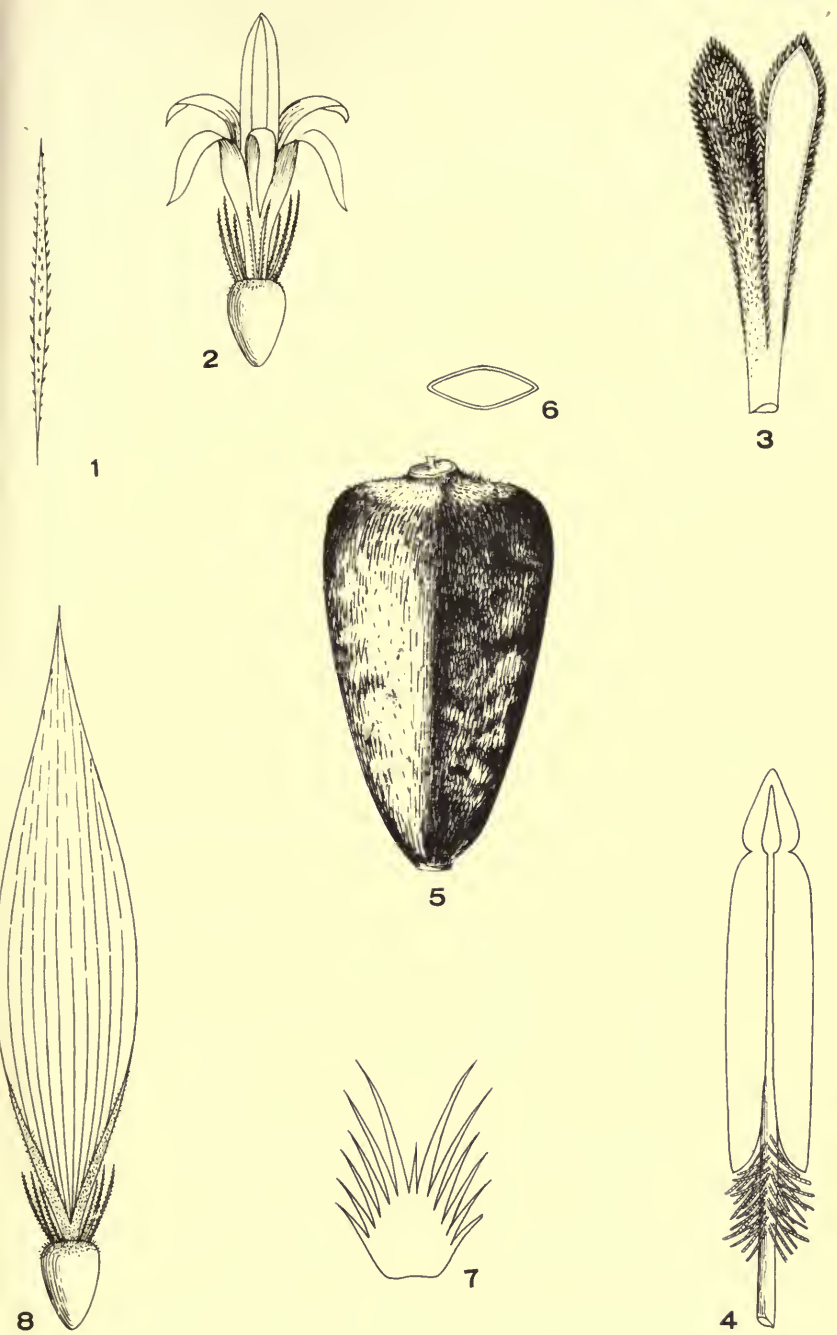

FIG. 2. Details of floral structure of *Rojasianthe superba:* 1. A single pappus awn; 2. Disk flower; 3. Style branches from a disk flower; 4. A single stamen detached from a disk flower; 5. Achene from a disk flower; 6. Cross-section of an achene; 7. Pale from receptacle; 8. Ray flower.

The distribution of this plant is confined to the higher, cool, moist barrancos between 2,400 and 3,300 meters in the mountains of extreme southwestern Guatemala. Thus far the species has been collected from the volcanoes of Zunil, Tajumulco, and Tacaná. It evidently occurs in adjacent Mexico on Volcán de Tacaná in the State of Chiapas, because the junior author collected it along the Guatemala-Mexico line on Volcán de Tacaná. It was observed to be common in all the moist, shaded ravines and barrancos, always along streams, of Volcán de Tacaná and Volcán de Tajumulco, in the latter area being found on all sides of the volcano. The time of flowering of the species seems to be confined to the latter portion of the dry season, in late February and March.

Rumfordia penninervis Blake, Brittonia 2: 343. 1937.—The type was obtained by Skutch in western Guatemala along the road between Quezaltenango and Colomba, Department of Quezaltenango. An additional collection has been made in the Department of San Marcos: Upper, south-facing, forested slopes of Volcán de Tajumulco, between Las Canojas and top of ridge, 7 miles from San Sebastián, alt. 3,300–3,900 meters, *Steyermark* 35843. Local name Té. A shrub of 3 meters; rays yellow, the disk dull yellow.

Schkuhria viscosissima Standl. & Steyerm., sp. nov.—Herba annua erecta subfastigiato-ramosa ut videtur 30–45 cm. alta, caulibus gracilibus striatis ubique dense pilis longiusculis patulis apice glanduliferis pilosis; folia bene evoluta non visa, pinnato-dissecta, segmentis scaberulis subrevolutis; capitula viridi-alba numerosa in cymulas laxas paniculatas disposita, pedicellis plerumque 5–8 mm. longis glanduloso-hirtellis; phyllaria 5–6 oblongo-obovata apice obtusissima vel rotundata 4.5–5 mm. longa dorso sparse adpresso-hispidula, marginibus pallidis hyalinis; achaenia pauca anguste turbinata 3 mm. longa nigrescentia dense hispidula; pappi squamae 8 obovato-orbiculares fere 1 mm. longae apice rotundatae albidae, basi subincrassatae; radii nulli.—Guatemala: Dry thicket, near Sacapulas, Dept. Quiché, alt. 1,040–1,240 meters, January 12–14, 1939, *Paul C. Standley* 62513 (type in Herb. Field Mus.).

The single available specimen is in poor condition, being in advanced fruiting state, but it is clearly of this generic relationship. The Guatemalan plant here described is a close relative of *Schkuhria neomexicana* Gray, which Rydberg (N. Amer. Fl. 34: 46. 1914) referred to a monotypic genus, *Cephalobembix*. *Schkuhria viscosissima* is noteworthy for its exceedingly abundant and viscid pubescence, unlike that of most other members of the genus.

Schkuhria guatemalensis (Rydb.) Standl. & Steyerm., comb. nov. *Tetracarpum guatemalense* Rydb. N. Amer. Fl. 34: 45. 1914.—Since the generic name *Schkuhria* is conserved, this transfer becomes necessary.

Simsia lagascaeformis DC. Prodr. 5: 577. 1836.—The species ranges widely in Mexico, and by Blake in his account of the genus (Proc. Amer. Acad. 49: 382. 1913) is reported only from that country. The following collections attest its occurrence in Guatemala: Dept. Sacatepéquez, near Antigua, in hedges or cafetales, a branched herb 1–2.5 meters high, common, the involucre black-purple, alt. 1,500–1,600 meters, *Standley* 58037, 60374. Dept. San Marcos, along Río Tacaná, near San Antonio, alt. 2,700 meters, *Standley* 66164.

Verbesina agricolarum Standl. & Steyerm., sp. nov.—Ut videtur frutex ramosus, caulibus subgracilibus viridescentibus striatis resinoso-puberulis et sparsius pilis albidis patentibus pilosis, internodiis brevibus; folia alterna inter minora petiolata herbacea, petiolo usque 2.5 cm. longo saepe fere ad basin alato, basi non dilatato, foliis supremis tantum sessilibus; lamina late rhombico-ovata usque oblongo-ovata vulgo 5.5–12 cm. longa atque 2.5–8 cm. lata acuta vel breviter acuminata, inferne cuneato-angustata et prope basin abrupte in petiolum contracta, arcte dentata, supra viridis dense scabra, pilis basi bulboso-incrassatis, tactu asperrima, subtus griseo-viridis, ubique sat dense pilis mollibus albidis aliquanto intertextis pilosa, nervis lateralibus utroque latere ca. 8; inflorescentia terminalis paniculata corymbiformis 3.5–8 cm. lata, ramis exalatis dense pilis albidis patulis pilosis, pedicellis gracilibus usque 8 mm. longis, bracteis parvis lineari-subulatis, capitulis paucis vel numerosis radiis exclusis ca. 5 mm. longis et 3 mm. latis luteis; phyllaria 2–3-seriata inaequalia viridescentia lineari-oblonga 3.5–4 mm. longa sparse pilis brevibus villoso-pilosula, exteriora obtusa, interiora acuta vel acutiuscula; radii ca. 8 laete lutei ovales vel late oblongi ca. 3.5 mm. longi patuli; flores disci numerosi, paleis acutis vel acutiusculis; corollae ca. 2.5 mm. longae.—Guatemala: Finca La Alameda, Dept. Chimaltenango, September 21, 1937, *J. R. Johnston* 1026 (type in Herb. Field Mus.); October 17, 1936, *Johnston* 120; July 30, 1937, *Johnston* 913.

The specimens are all in flower and no achenes are available. Superficially the specimens resemble *V. guatemalensis* Rob. & Greenm., but that has large, white heads. *V. agricolarum* belongs to the Section *Saubinetia*, and is perhaps related to *V. perymenioides* Sch. Bip. of Mexico, but that has larger heads and differs in almost

all details. Finca La Alameda is the seat of the National School of Agriculture of Guatemala, a fact to which the specific name assigned to this plant refers.

Verbesina hypoglauca Schultz Bip. ex Klatt, Leopoldina 23: 144. 1887.—Previously the plant has been known from the states of Oaxaca and Puebla, Mexico, where it has been collected but few times. It is plentiful at rather high elevations on at least two of the Guatemalan volcanoes: Dept. Quezaltenango, slopes of Volcán de Santa María, above Palojunoj, at about 3,300 meters, in forest, March, 1939, *Standley* 67657, 67597. Dept. Chimaltenango, slopes of Volcán de Acatenango, above Las Calderas, at upper limit of *Chiranthodendron* forest, alt. 2,700 meters, common, January, 1939, *Standley* 61832. A shrub of 2–3 meters with yellow, showy heads. Among Guatemalan species this is easily recognized by the pale, silvery-silky under surface of the leaves.

Verbesina scabriuscula Blake, Contr. Gray Herb. 52: 54. 1917.—The type was collected at San Felipe, Dept. Retalhuleu, Guatemala. The following collections from the same country agree perfectly with the original description, in spite of the fact that all were collected at substantially higher elevations than the type: Villa Guadalupe, alt. 1,480 meters, in cafetal, *J. G. Salas* 1431; a small shrub; flowers white, visited by bees; odor very disagreeable. Finca La Alameda, Dept. Chimaltenango, *J. R. Johnston* 256. Dept. Jalapa, La Laguna, base of Volcán de Jumay, 1 mile north of Jalapa, alt. 1,400–1,600 meters, oak forest, *Steyermark* 32293; a shrub of 3 meters. Near Finca La Alameda, Dept. Chimaltenango, alt. 1,830 meters, pine forest, *Standley* 59137; a shrub of 2.5 meters. Cumbre de Tuilacán, southwest of San Martín Chile Verde, Dept. Quezaltenango, alt. 2,400 meters, in wet thicket, *Standley* 67791. Finca El Hato, northeast of Antigua, Dept. Sacatepéquez, alt. 1,950–2,040 meters, brushy slope, *Standley* 61201. Cuesta de las Cañas, above Antigua, alt. 1,950 meters, brushy slope, *Standley* 58838; a simple shrub of 2–4.5 meters, common. Above Las Calderas, Dept. Sacatepéquez, alt. 1,800 meters, moist barranco, *Standley* 59985. Known by the names Toquillo and Suquinay blanco. In December the shrub is a beautiful and showy one, attracting attention because of its large, flat-topped panicles of pure white heads, and on account of its huge, merely dentate leaves as much as 50 cm. or more in length.

Verbesina Steyermarkii Standl. sp. nov.—Frutex vel arbor usque 6 m. alta, ramis ochraceis vel pallide brunneis striatis

lenticellatis primo sericeo-pilosis, cito glabratis, exalatis, internodiis brevibus; folia modica vel parva alterna petiolata membranacea, petiolo brevi et fere ad basin alato, parte nuda gracili usque 1.5 cm. longa; lamina anguste lanceolata usque lanceolata vel cuneato-oblanceolata 9–25 cm. longa 2.5–9.5 cm. lata acuminata vel saepius longe angusteque attenuato-acuminata, basin versus longe anguste attenuata, margine adpresse crenato-serrato vel in foliis majoribus grosse serrato, supra in sicco viridis fere glabra sed primo sparse piloso-scabra, plus minusve pustulato-punctata, subtus fere concolor vel grisea, primo sparse pilis pallidis laxis mollibus induta sed in statu adulto fere omnino glabra, nervis lateralibus utroque latere ca. 7; inflorescentia terminalis paniculata corymbiformis 10–16 cm. lata multicapitata, ramis nudis densiuscule sericeo-pilosis, pedicellis gracilibus sed rigidis usque 15 mm. longis, bracteis parvis lanceolatis adpressis; capitula radiis exclusis ca. 7 mm. longa et 4 mm. lata lutea dense aggregata; phyllaria arcte adpressa lutescentia 2–3-seriata inaequalia oblonga vel exteriora ovato-oblonga ciliata dorso glabra vel glabrata obtusa vel rotundata; radii ca. 8 late oblongi ca. 3 mm. longi; flores disci numerosi, paleis angustis albidis hyalinis apiculatis, corollis 3 mm. longis; achaenia anguste oblongo-cuneata glabra nigra usque 3.5 mm. longa, interiora exalata, exteriora late alata et usque 4 mm. lata, alis pallidis tenuibus corpore achaenii latioribus, aristis pappi erectis usque 2 mm. longis; capitula fructifera quam florifera majora ca. 7 mm. longa et fere 1 cm. lata.—Guatemala: Dept. Chiquimula, between Chiquimula and La Laguna, alt. 500–1,000 meters, grassy places on top of rim rock, October 27, 1939, *Julian A. Steyermark* 30698 (type in Herb. Field Mus.). Dept. Jalapa, Volcán de Imay, alt. 1,500 meters, January, 1908, *Kellerman* 8077, 7982. Jalapa, Dept. Jalapa, alt. 1,050 meters, January, 1908, *Kellerman* 7850.

Like *V. agricolarum*, this is a member of Section *Saubinetia*, and it resembles that species in the size and appearance of its heads, and in the shape of its leaves. The almost glabrous leaves, smooth to the touch on the upper surface, rather than very rough, distinguish *V. Steyermarkii* at once from *V. agricolarum*.

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